JOURNAL OF AMERICAN INSURANCE

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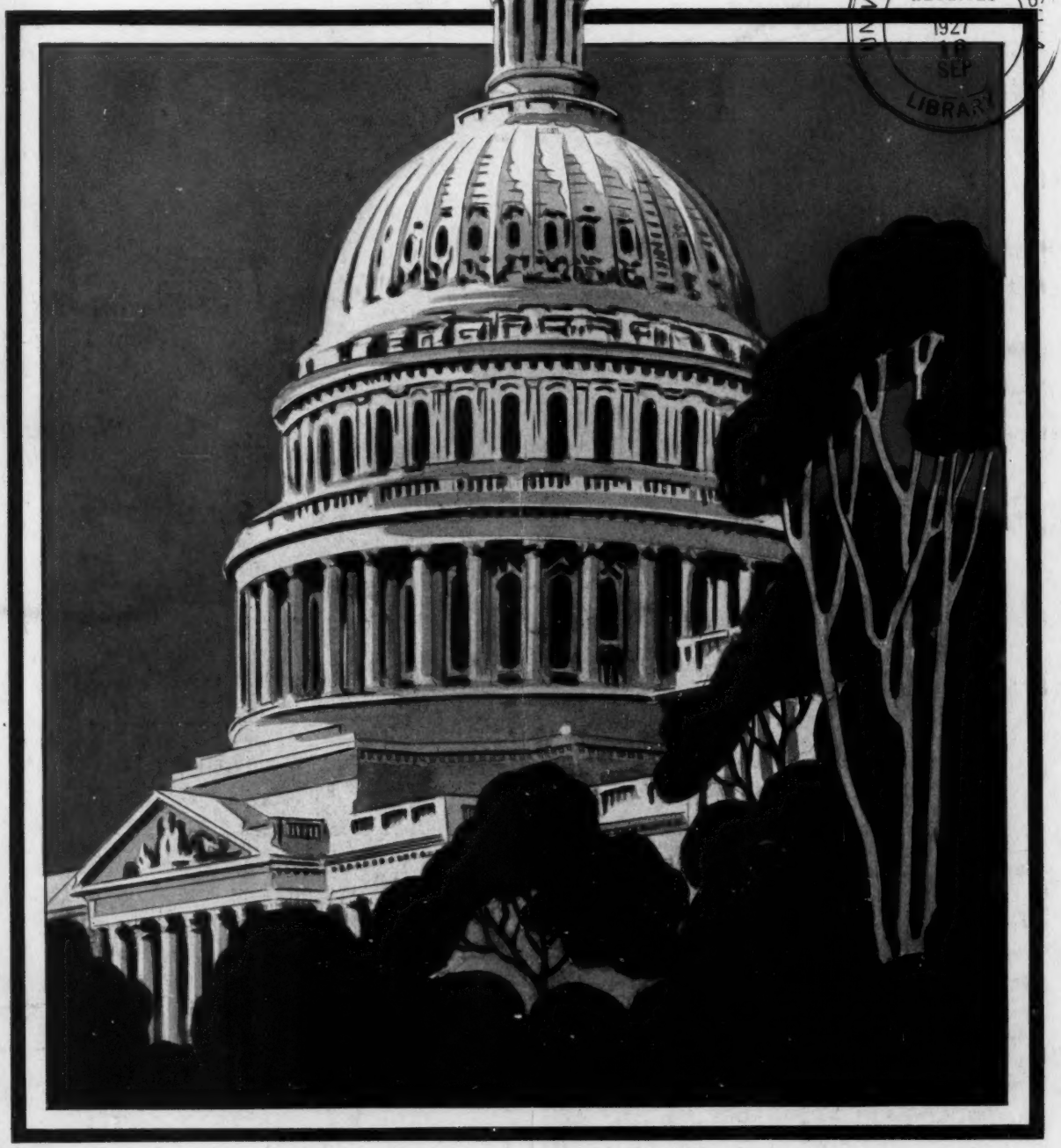

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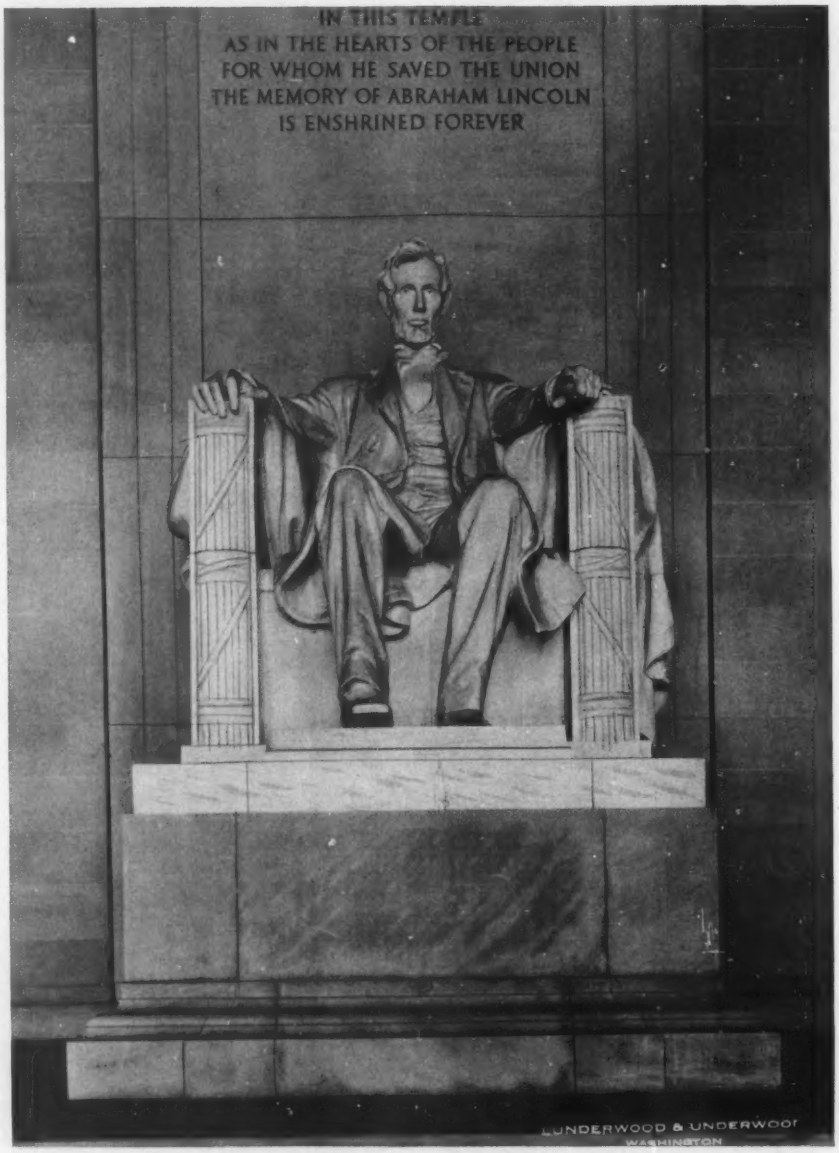
IN THIS TEMPLE
AS IN THE HEARTS OF THE PEOPLE
FOR WHOM HE SAVED THE UNION
THE MEMORY OF ABRAHAM LINCOLN
IS ENSHRINED FOREVER
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WASHINGTON

LINCOLN STATUE
In the Lincoln Memorial at Washington

THE Lincoln Memorial, Designed By Henry Bacon Is Regarded By Many as the Finest Monument Ever Erected in Any Age of History. Its Impressive Approach of Broad Steps and Wide Terraces Lend An Air of Solitary Dignity and Grandeur to the Majestic Statue Which Reposes Within the Structure.

Development of Aviation Insurance

Scope and Nature of This Interesting and Comparatively New Branch of Underwriting

By STEPHEN B. SWEENEY

Assistant Professor of Insurance, Wharton School of Commerce, University of Pennsylvania

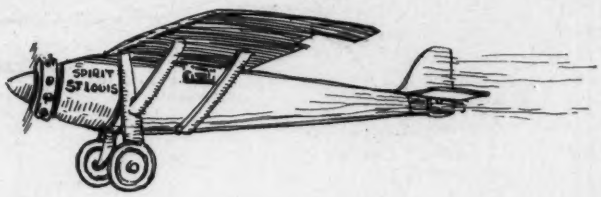
ARTICLE I.

THE World War and the years immediately following brought an extensive development in the art and science of aircraft transportation. Colonel Lindbergh's daring and inspiring New York to Paris flight has convinced even the most skeptical that great progress has been made. Commercial enterprisers have been trying, with varying success, to capitalize this war and post-war progress. In the United States at the present time, there are at least five hundred "free-lance" aircraft operators maintaining in service about one thousand planes. They report, for the year 1926, flights covering seven and three-quarter million miles and close to four hundred thousand passengers carried on occasional flights.

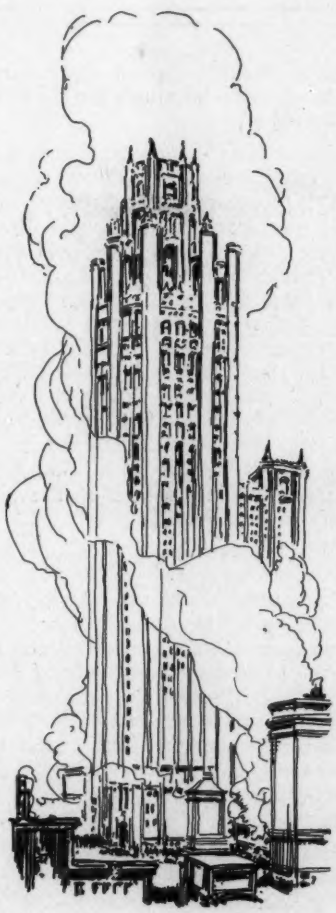
Besides these operators there are those who operate scheduled services. The Contract Air Mail Service now spreads a network of regular airlines over the United States. Twenty routes, covering approximately twenty thousand miles, connect Chicago, directly and indirectly, with such outlying points as Seattle and Pasco (Washington), Los Angeles, Pueblo, Dallas, New Orleans, Miami, Boston, Detroit and Minneapolis. During 1926 the Transcontinental and the New York-Chicago Overnight planes alone flew two and one-half million miles. With the Contract Air Mail Service in full operation, 1927 statistics will doubtless show a mileage flown of close to twenty million.

An examination of an airmap of Europe will show even greater development. It is estimated that there are twenty-five thousand miles of airway. The network of airlines resembles a vast web, especially heavy at London, Paris, Brussels and Berlin. The more important recent developments are those which push the means of rapid communication into the East. Moscow, Rostov, Batum, Constantinople and Angora may now be reached in relatively few hours by air from Paris and Berlin. There are nine services daily from London. An air trip from Cairo to Bagdad seems confronted with many difficulties but its accomplishment is regularly possible.

Lindbergh's Amazing Flight has Awakened the World to the Future of Aviation



TO GET a complete world picture of aircraft transportation one must also consider South America and Australia. The German controlled line in Colombia is said to be the only self-supporting, common carrier air transportation company in the world at the present time. Usually difficult travel in Australia is now facilitated by an almost complete circle of air routes around this great island.



The foregoing picture was true yesterday. It will not be true tomorrow. Reports of new air lines are received almost daily from our government trade representatives abroad. Keeping track of American developments is no longer an easy job.

Underwriters have been called upon to assume the hazards incident to this development. Much of the commercial enterprise has awaited the creation of adequate, reasonably priced insurance protection.

This protection has gone through the usual stages of insurance evolution. The hazards were first assumed by interested and especially venturesome, individual risk takers. The sporadic development brought many differences in coverages and practices.

The progress of aircraft transportation and any general economic good thereby resulting is partly dependent on a digest and analysis of this underwriting experience which has been built up. The information on the matter in general circulation at the present time is largely of a hearsay or inspirational nature.

It is the purpose of these articles to present such a digest and to attempt such an analysis. Emphasis will be placed on American experience and practice. European aviation insurance is, as might be expected, largely controlled by pools and other agreements for secrecy. American experience, furthermore, is probably of more truly economic

significance because of the absence of loosely subsidized aircraft transportation in this country.

The Aviation Hazards

THE term aviation insurance has a broad connotation. It is not confined to the hazards transferred from the shoulders of the operators of aircraft. It includes all insurable hazards arising out of the use of the air as a field of transportation. Both lighter-than-air craft and heavier-than-air craft are used in various parts of the world and are of interest, therefore, in a study of aviation insurance. Operations of lighter-than-air craft (i. e. dirigibles, blimps, "airships") have been confined largely to the uses of war. (There are a few exceptions, such as the trip of the Norge over the North Pole and the post-war commercial airship route operated by the Germans between Berlin and the Swiss border until the Allies put a stop to it in 1919.) This limited use has kept them out of the sphere of private insurance and has resulted in little interest in them on the part of underwriters. Little interest usually means little knowledge, and so, for the present, we can discuss only airplane (heavier-than-air) underwriting, although most of the hazards here outlined are common to both types of aircraft.

These hazards may be arranged in three broad classifications: (1) property; (2) third party liability; and (3) personal (accident and life). Their order of importance will vary according to the point of view. For the purpose of an insurance discussion the focus of interest seems to be on the degree of financial hazard to the operator and to the underwriter. It appears to be the consensus of opinion among the operators, insurance carriers and brokers that the above order indicates the relative importance of the aircraft hazards.

The property hazards include fire and lightning damage to aircraft and to hangars; transportation damage to aircraft; tornado, cyclone and windstorm damage to aircraft and to hangars; burglary and theft of aircraft and of parts; and cargo loss suffered by consignors. An additional, rather unique, form of hazard is forced on property owners by irresponsible aircraft operators. It is called damage to property from aircraft. This hazard is the cause of the recent attempt at legislation to compel operators to file an indemnity bond before being allowed to take off from a landing field. It may not be long before we will be forsaking our present absorbing discussion of compulsory automobile insurance for the pros and cons of the same type of aviation coverage.

THE general class of aviation hazards that ranks second in importance is that of third party liability. This includes the so called public liability of aircraft operators for injury to third parties who are in no way connected with the venture. It also includes public liability for property damage suffered by such third parties. (This is the type mentioned above, that some believe should be made compulsory.) Besides these, the aircraft operator has a legal liability to passengers for injuries suffered by them. He must also make provision for the legal requirements as to his liability to his workers for injuries traceable to the course of employment, i. e., under the common law of negligence or under workmen's compensation statutes.

The third class of aviation hazards, designated as personal, includes the chance of death or accident to pilot, mechanic or passenger. It is

the field in which the underwriter's responses have been slowest, hesitating and least sufficient. Few companies have been willing to issue life insurance for pilots or adequate personal accident insurance for pilots or passengers. Adequacy of protection in this class would also include a price, stipulated in the policy, for the waiver of policy conditions (in either life or accident and health policies) forbidding aeronautical activities on the part of policy holders. This subject will be discussed at greater length in a later article. It is probably a safe generalization that a person who prides himself on the completeness of his personal insurance program will be more or less seriously affected by any aeronautical activity. It is the province of aviation insurance to provide *adequate* substitutes until regular life and health policies are free from aeronautical restrictions.

Difficulties of American Aviation Underwriting

THE underwriting of these various classes of hazards has been confined to capital stock organizations or to individual underwriters, as far as careful investigation has been able to disclose. Apparently no mutual organizations have assumed, or have been created to assume, any of the aviation hazards. One exception to this may be found in mutual life insurance.

The American philosophy of mono-line insurance has far reaching effects in this as in all other phases of underwriting. Mono-line insurance laws very largely explain the foregoing three-fold classification of hazards. Property risks are usually legally acceptable only to organizations authorized to underwrite fire and marine hazards. All of the third party liability risks can be written only by the casualty underwriters. Personal risks can usually be underwritten by life and casualty insurance organizations, although some states confine the personal accident underwriting to casualty companies. It must be remembered that this is similar to all generalizations. There are exceptions to be found among the insurance laws of the forty-eight states. New York laws, however, follow the above classification and they are more or less typical because of the far reaching effect of the insurance laws of that state.

European underwriters do not usually suffer these limitations on the scope of their activities. The multiple line principle prevails. This means that an aircraft operator can get a single underwriter to assume under one policy all of the hazards outlined above.

It is generally believed among underwriters and students of insurance that the multiple line principle has distinct advantages over the mono-line principle. This fact has been recognized in the Model Marine Insurance Bill approved by Congress, March 4, 1922 (for regulation of marine insurance in the District of Columbia) and substantially adopted by the state of Oregon. The model bill proposes that every insurance organization be allowed to write all forms of insurance with the exception of life insurance which must be handled by separate companies. Multiple line underwriting seems to be particularly desirable in

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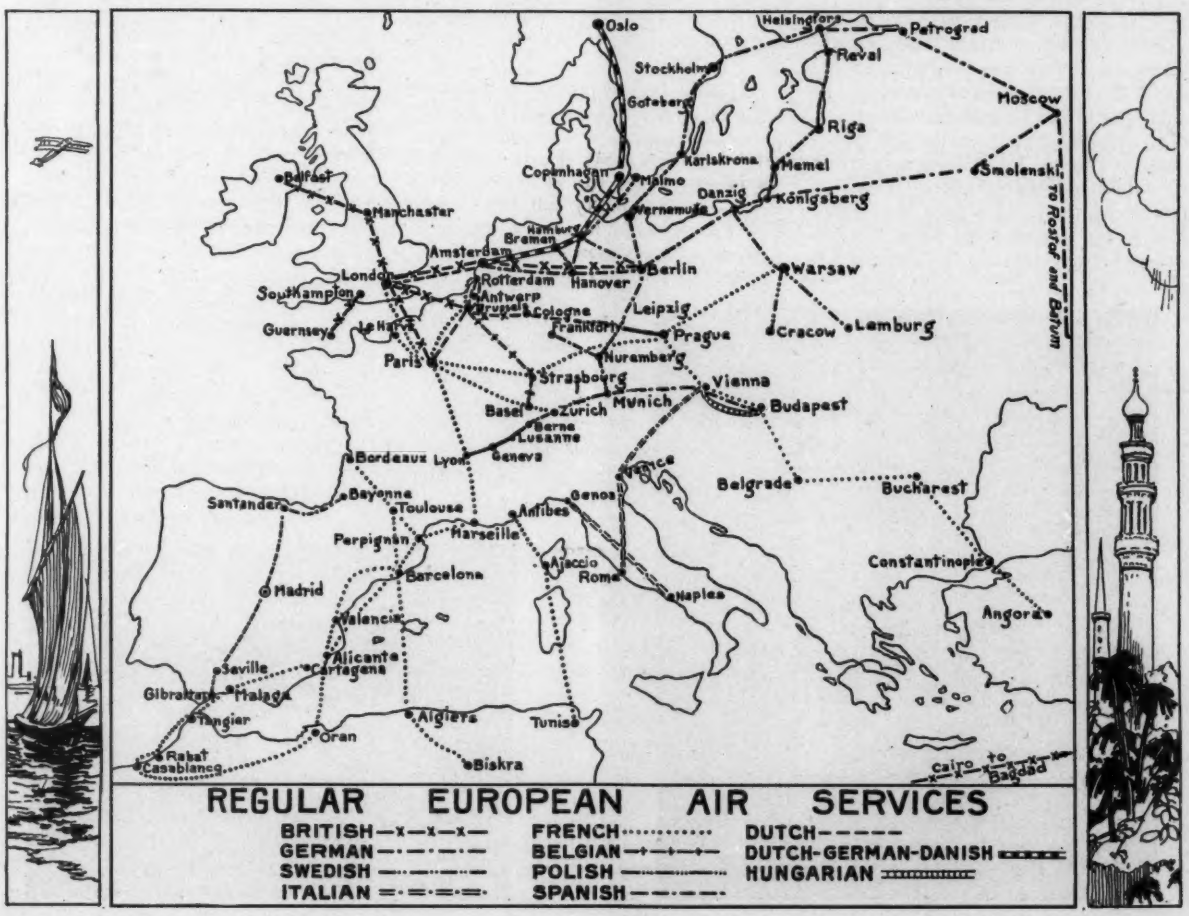


Washington Convention Ready

Great Gathering of Mutual Delegates Assured of Exception Program of Business Conferences and Recreation

SUCCESS has such a pleasant sound and in no connection is it more pleasant than when it is applied to a Mutual insurance convention. For the great gathering of the Federation of Mutual Fire Insurance Companies and the National Association of Mutual Insurance Companies in Washington September 19 to 23, is already an assured success, since advance reports from all over the United States plainly indicate that large numbers are planning to take advantage of the offered opportunity to see the nation's capital and exchange notes on Mutual business at the same time.

Those who are familiar with Washington by experience know that the city is an ideal one for conventions and by the same token are aware that hotel and other arrangements are best made well in advance.

SINCE the date is so near it certainly behooves all Mutual delegates to secure reservations at the earliest convenient moment. The fact should not be lost sight of either, that one delegate may be of assistance to another by making it possible to obtain half fare railroad rates on the return trip. This may be done by asking for a certificate when the going ticket is bought. If the station agent has no certificate to give you, request a receipt.

The reason for this procedure is because the railroad companies have agreed to make the half fare return rate concession if a certain number travel via their lines. Thus even though you live only a comparatively short distance from Washington, it will be an appreciated expression of the Mutual spirit if you will make it a point to remember the certificate—which, by the way, will be validated in Washington to entitle the bearer to the fare reduction.

The Federation will be glad to make reservations from Chicago to Washington on either the Capitol Limited of the B. & O., or the Liberty Limited of the Pennsylvania.

Or if you choose to make your reservations direct, address Mr. P. C. Benedict, Asst. Gen. Passenger Agent, B. & O. R. R., Room 607, 112 W. Adams St., Chicago, or Mr. A. W. Keene, Passenger Representative, Room 524, Union Station, Penn. R. R., Chicago.

As said before, those desirous of viewing the really splendid scenery along the way, which includes mountains, and majestic rivers, and such interesting places as Harper's Ferry and other spots of Civil War celebrity on the banks of the Potomac, may leave on a late afternoon train, arriving in Washington the next afternoon.

Every plan, whether for business or pleasure in connection with the convention program, is progressing smoothly, and the array of speakers, the schedule of conferences and subconferences, and the itinerary of trips in and around Washington, when completed will be of extraordinary attractiveness.

The ladies, more than ever, will have a large share in the proceedings, especially at the social affairs and as the saying goes, "all the Mutual World and its wife will be there."

WE have saved a description of some of the best points of interest in the capitol, for this September number.

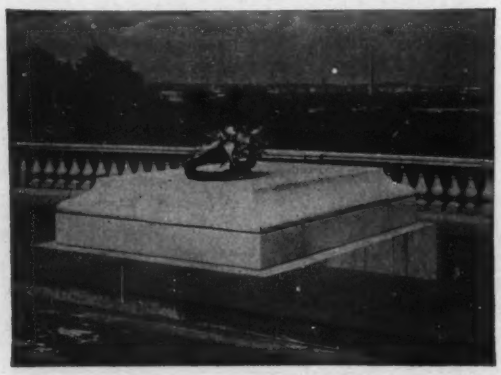
One of the finest features of Washington is its system of public parks and squares. At the intersection of all the large avenues are beautifully-kept Circles, many containing monuments of men famous in history. The most prominent of the larger parks is the Mall, stretching from the Capitol to the Potomac River, and embracing the Botanic Gardens, Seaton Park, Armory Square, the Smithsonian Grounds, the Agricultural Grounds, and the Monument Grounds within its boundaries, and forming with the President's Park or Executive Grounds and Lafayette Square a magnificent stretch of greensward, kept in perfect order and adorned with the choicest floral decorations. Judiciary Square, stretching from Fourth to Fifth and from D to G Streets; Franklin Square, at Fourteenth and I Streets; Mt. Vernon Square, at

(*Continued on page* 18)

TWO GREAT SHRINES IN THE CAPITAL

Left—Night View of the National Cathedral

Right—Tomb of the Unknown Soldier



Paying for Motor Accidents

Securing Financial Responsibility from the Financially Irresponsible for Negligence in the Operation of Motor Vehicles

By FRANK H. HARDISON

Liberty Mutual Ins. Co., Boston, Mass.

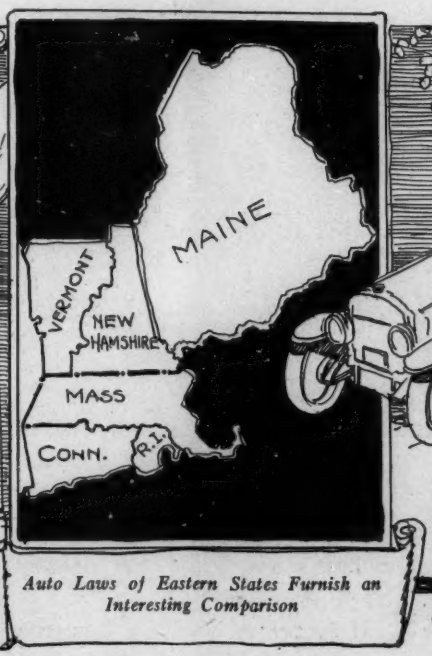
THE many accidents resulting in death or severe injuries caused by motor cars and the many financially irresponsible operators on the highways have naturally aroused the public to seek remedies for the lack of ability of so many to pay a judgment at law due to their negligence or careless driving. This quest has been particularly evident in the section of the country comprising the New England States, each one of which now has a law, which aims to improve the condition of financial irresponsibility for motor accidents due to negligence of the operator and at the same time the accident rate. The states which have taken such action the present year are Maine, New Hampshire, Vermont and Rhode Island. The Massachusetts law became effective January 1, 1927, and the Connecticut January 1, 1926.

The Acts sponsored by these states present two types of procedure only. Massachusetts stands alone for a law which requires as a condition precedent to the registration of a motor car that the owner shall show, either by insurance or a surety bond, that any injury caused by his car on the public highways of the state for which he is responsible can be met up to the $5,000/$10,000 limit specified in the law, or by a deposit of $5,000 in cash or securities available for a judgment for a liability claim for injury to a person arising from such auto accident. The laws of the other five states are not identical but the striking feature of them all is that the states were content to require no evidence of ability to pay for injuries until an accident has occurred or until there had been a conviction for violation of some provision of the motor vehicle law as operating a car while under the influence of intoxicating liquor or drugs. Then, following conviction for violation of the law or following an accident causing injury or damage, the car must be taken from the highway and the operator's license suspended in case of accident where the operator was probably at fault unless resources are made immediately available for satisfying up to the limit specified in the law any judgment on account of the accident. The Rhode Island law, however, has no specific suspension provision for residents of the state but certain requirements of the law if strictly enforced might have that result.

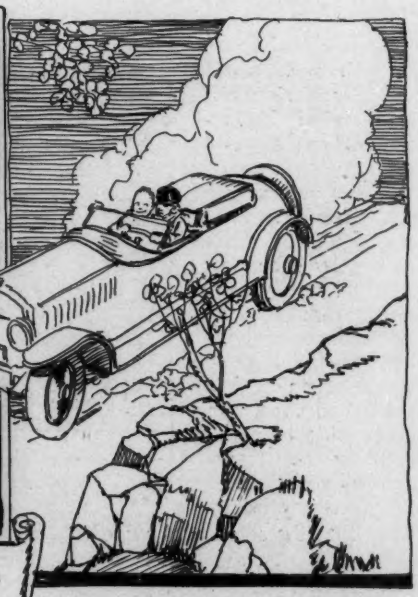
IF a defendant in a case gives evidence that he had an auto liability policy or surety bond of the required amounts in force in an authorized company when the accident occurred it is sufficient in the law's view to justify a conclusion that the judgment will be satisfied to the extent required by the acts. Then neither the operator's license nor the registration of his car is suspended as a result solely of the accident, there being no contributory charges. If, however, no such protection is in force when the accident happens, some evidence of resources to meet a judgment on account thereof must be forthcoming. Manifestly that evidence must be in some other form than a policy for if none was outstanding, one dated subsequently if it could be obtained, which is doubtful in most cases, would not cover a prior casualty. As well expect to take out a policy to pay for a loss on a house already burned or a life already extinct.

This leaves an approved deposit or a bond as the probable resources for such persons as can supply them; many will find it impossible to sup-

Justice Is Seeking a Solution of the Accident Problem



Auto Laws of Eastern States Furnish an Interesting Comparison



Careless Drivers Menace Not Only Their Own Lives but Others

ply either. If, however, either is furnished without delay the registration of the car and the operator's license will remain in force as far as affected by any provision of these acts. Failure to furnish means their suspension.

The outcome of this appears to be that after the impecunious uninsured person has had an accident doing injury or damage for which he is to blame, he must, sooner or later depending on the state where the trouble occurs, cease to use his car on the highway, while the insured or financially responsible person who can furnish evidence of his ability to meet a claim for a prior accident due to the careless operation of his car may continue to be licensed and registered.

Maine, Chapter 210, 1927—*Effective January* 1, 1928

THIS is an Act concerning financial responsibility for damages caused by the operation of motor vehicles. The Secretary of State administers it. It provides that the Secretary shall require from (1) any person who has been convicted of violation of the law relating to the operation of a motor vehicle while under the influence of intoxicating liquor or drugs, or of operating recklessly, or (2) from the registrant of such motor vehicle, or from both, proof of financial responsibility to the amount of at least $5,000 for injury to a person and $1,000 for damage to property.

Upon failure to furnish such proof the Secretary, until such proof is furnished, *may* suspend the registration of the car and refuse thereafter to register any motor vehicle owned by such person. If such person be a non-resident the Secretary may withdraw his privilege of operating any motor vehicle in the State and refuse to register any car transferred by him unless the Secretary is satisfied that the sale is bona fide.

Such proof of financial responsibility shall be furnished as shall be satisfactory to the Secretary. He may accept a liability policy of an amount specified in the Act as such evidence, or a bond of a surety company or an individual conditioned upon the payment of the specified amounts, or a deposit of an amount in cash or collateral satisfactory to the Secretary. If the deposit is in cash the state shall pay interest thereon if so directed by the Secretary but not in excess of 5 per cent. Additional evidence of financial responsibility shall be furnished the Secretary upon his request therefor.

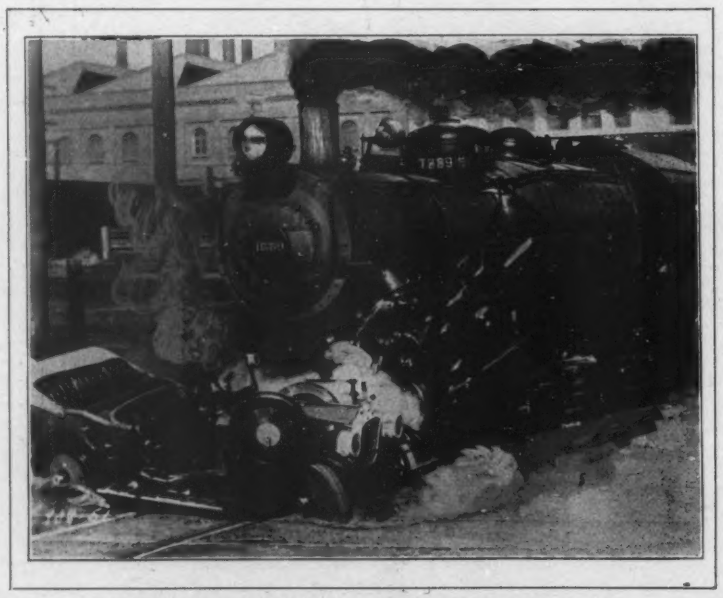
The liability policy or bond shall be in such terms as the Secretary "shall deem adequate." A reasonable sum not exceeding $10 shall be charged for the investigation of the title of a surety's real estate or of the collateral deposited and of the value thereof.

A certified copy of the operating record of any person subject to this Act shall be furnished by the Secretary to any insurance company, or surety, upon their request and if there is no record of a person's offending respecting the motor vehicle laws the Secretary shall so certify.

Any registrant whose registration has been suspended shall immediately return to the Secretary his registration certificate and number plates and failing to make such return shall be subject to a penalty of not over $25 and the expense of retrieving the number plates by the state highway police.

If the person furnishing insurance or a bond, or making a deposit shall not in the succeeding three years have violated any provision of the motor vehicle law and no right of action or judgment on account of the operation of a motor vehicle is then outstanding against him, the Secretary may cancel the bond and surrender other evidences of financial responsibility.

The Secretary is empowered to make rules and regulations necessary in the administration of this Act.



Luckily This Accident Was for Moving Picture Purposes Only

New Hampshire, Chapter 54, 1927, *Effective June* 1, 1927

THE New Hampshire Act covers more ground with details than any of the other laws of its type. Yet its sole reason for taking a car from the road is the happening of an accident, while in three of the other four states conviction of certain offenses against the general motor law may serve to remove the offender from the highway unless the specified financial responsibility is established as required by the law. In New Hampshire a car owner may have one accident injuring the person or damaging the property of another before being called upon to establish his financial responsibility. When, however, the accident has occurred a special preliminary trial is held by a court upon petition of the plaintiff and if it finds that the accident "was probably due in whole or in part to the negligence of the defendant, and not due in whole or in part to the negligence of the plaintiff" the defendant's car can be used no more on the road and he can drive no more until proof of resources is furnished sufficient up to the limit of the statute to pay the judgment that may at a formal trial be awarded on account of the accident. Hence the impecunious person who has met with an accident for which he is to blame will be "off the road" if he was not adequately insured before the event, for it is practically certain that he cannot secure a financial backing to settle for that accident that will justify the authorities in renewing or continuing his licenses.

(*Continued on page* 27)

Thwarting the Fire Hazard

What the United States Bureau of Standards Has Been Doing in Researches on the Fire-Resistive Properties of Building Materials

By S. H. INGBERG
Of the United States Bureau of Standards
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THE reduction of the large national loss due to fire, which in destruction of property values alone now exceeds $500,000,000 per annum, has enlisted the efforts of local, State and national agencies.

It is recognized that a large part of this loss is strictly preventable through the more general use of truly fire-resistive building construction that will give less opportunity for fires to originate, less opportunity for them to spread within the building or to adjacent buildings, and smaller general damage to the construction.

This fire-prevention work, expressed through the medium of structures, necessarily takes some time in yielding apparent results, but as old buildings are replaced and the new construction reflects the knowledge gained in the laboratory and the field of fire experience, a better general type will eventually predominate, less subject to destruction by whim of circumstances or human carelessness, and that will spread the destruction less readily to the neighboring construction.

As an aid to this end the Bureau of Standards of the United States Department of Commerce is conducting researches on the fire-resistive properties of building materials and building constructions in order that building designers, constructors and owners may have reliable information with respect to the properties of the various available materials and how these can be best proportioned in building members to form fire-safe and economical construction.

OF THE various building members, columns and similar isolated supports are of the most important. Single columns often carry a million or more pounds of floor load, and the collapse even of a smaller column may cause adjacent portions of stories above and below to fall with it.

Some of the first fire-resistance work of the Bureau of Standards was accordingly concerned with the fire-safety of such building supports. In co-operation with the Associated Factory Mutual Laboratories of Boston and Underwriters' Laboratories of Chicago more than 100 fire tests and fire and water tests of rolled steel, cast iron, concrete and timber columns were conducted.

In such tests the conditions to which a building member in a severe fire is subjected are duplicated as nearly as possible. In the case of columns, loads equal approximately to those they would carry in a building are applied during the fire test. The fire exposure was produced by placing the column in the middle of a gas-fired furnace, the intensity of the fire being regulated according to a predetermined time-temperature relation that was reproduced as nearly the same as possible for each test.

According to this procedure, temperatures corresponding to cherry-red heat, or about 1700 degrees Fahrenheit, obtained in the furnace one hour after the fire was started, increasing to 2000 degrees Fahrenheit at four hours and 2300 degrees at eight hours, the latter being what is ordinarily termed a white heat. These furnace exposures are deemed representative of what would obtain during a severe fire in a building.

The tests were continued until the column failed under its working load or until it withstood the test eight hours. A few columns of each kind of material were tested bare without any covering materials to protect them from the fire. These buckled and failed under the applied loads after eleven to fifty minutes of fire exposure.

Columns protected wtih various thicknesses of Portland cement concrete, clay hollow tile, gypsum blocks, brick and plaster on metal lath were then tested and found to stand up for periods from one to eight hours more. In some of the tests a hose stream such as would be used by firemen in extinguishing a fire was applied to the column after being exposed to fire in the furnace for periods of one hour or less.

To determine definitely the behavior under fire that is to be expected of concrete columns made of the materials in common use and reenforced with steel rods, ties and hooping according to present building practice, a series of about eighty fire and load tests of concrete columns was undertaken at the former Pittsburgh laboratory of the Bureau of Standards.

A furnace wherein temperatures up to the melting point of some of the column materials used and loads

Every Fire is a Demonstration of Good or Bad Materials

as high as 600,000 pounds could be simultaneously applied was used in the tests. It was found that the columns made of concrete containing large amounts of quartz, chert, sandstone or granite cracked and spalled rather decidedly when exposed to fire, those made with trap rock or blast furnace slag gave better resistance, but not as high as when limestone or calcereous gravel was used.

The latter, after cooling subsequent to a four-hour fire test under working load, withstood loads nearly as high as similar columns that had not been exposed to fire, and hence had apparently not been greatly damaged by the furnace test.

Those made with trap rock or blast furnace slag lost nearly one-half of their original strength in the four-hour fire test, and those made with the quartz or other siliceous aggregates failed under working load after fire tests of three to four hours' duration.

A few of them sustained at the end of the four-hour fire test loads a little in excess of the working load, which latter was about 15 per cent of the total strength of the column. The column made with sand and broken limestone showed few effects from the fire test, but two outstanding slabs of concrete in the test became loosened by loading the column to failure after the fire test. Another column was made with sand and blast furnace slag and showed considerable fire-resisting power.

How the fire damage can be reduced and the resistance of concrete columns susceptible to fire damage increased to withstand the most severe fires that can reasonably be expected in buildings were also fully investigated. It was shown that a large gain can be had by placing metal ties, such as wire mesh or expanded metal, near the surface of columns of concrete that otherwise would spall when subjected to fire.

Such ties hold the outer concrete in place so it can protect the load-bearing concrete and steel within. Further improvement can be obtained by replacing some of the outer concrete with cement, gypsum or special plasters, preferably tied or re-enforced as above indicated for concrete protection. The results in general answer fairly definitely the many questions that have been raised relative to the reliability of concrete under fire conditions and the report recently issued by the Bureau of Standards should be of interest to all concerned with concrete in building construction.

Of prime importance in restricting the spread of fire within buildings and from one building to the other are walls and partitions. Many a fire that threatened a whole district with extinction has been stopped at a fire wall, and the fires within buildings can be restricted by the use of suitable fire partition walls and partitions. Fire can also be prevented from spreading from one building story to the next by the use of fire-resistive inclosure walls for stair, elevator and other communicating shafts.

A SERIES of fire tests of brick walls has recently been completed. While the use of brick for party and fire walls as well as for other bearing and nonbearing walls goes back several thousand years, there is at present no uniform practice in wall thicknesses used for given purposes, some city building codes requiring twice the thickness permitted in other cities for the same conditions in buildings.

The tests showed that greater wall thicknesses are often required than necessary for safe construction. Walls eight inches thick were found capable of holding back very severe fires, and twelve-inch walls afforded protection sufficient for the most severe fire conditions that are to be expected in buildings. Heavier wall thicknesses would be required only on the score of strength and stability.

Included in the tests were also several types of hollow-brick walls and a four-inch wall re-enforced with pilasters, these walls using less brick than the solid walls; and the hollow types have one or more air spaces that afford good insulation against cold and moisture. There are also in progress comprehensive tests of the fire resistance of hollow-tile walls.

These are built of hollow units of burnt clay varying in size from a unit intended to occupy the same space in the wall as two bricks to one having a volume of one cubic foot or twenty-one bricks as placed in the wall. The weight of the masonry is about one-half of that of solid walls. The use of hollow tile for load-bearing walls is a development coming within the last twenty years, and data on the fire resistance to be expected were urgently needed for information in formulating city building codes and similar regulations.

In addition to tests in the large furnace, more than one hundred tests have been made in the small furnace, which takes a specimen four by four feet, whereas the large furnace is built to test walls eleven feet high and sixteen feet long, representative in size of a wall panel in a building.

Much essential information can, however, be obtained in smaller tests and a considerable economy effected in time and expense. The fire tests of hollow tile indicated this material to be suitable for use in a considerable range of building construction when used in proper thickness and with suitable details.

Another matter that has been given considerable attention is the fire resistance of roofing materials. Roof coverings are important in preventing the origin of fires from chimneys sparks or brands from other burning buildings. Also, they should give off a minimum of brands in case the building covered burns, in order that the fire may be prevented from spreading to the neighboring construction.

City regulations are becoming more and more stringent in the types of roofing materials permitted within city or fire limits the tests at the Bureau of Standards being undertaken at the request of Secretary Hoover to supply information on which such regulations can be justly based. The tests consist in subjecting typical roofing materials to burning brands of various sizes with wind velocities of six miles per hour or more over the decks.

In some of the tests the air currents are conditioned up to temperatures that would obtain around a burning area in a conflagration by means of steam and gas and heated coils. In other tests a sheet of flame is applied over the roofing deck to determine the combustibility and the amount and character of brands given off. Other tests are designed to determine the rapidity of spread of fire over a roofed area.

The protection of valuable records is important, since fires in commercial and public buildings often cause a greater loss in the destruction of documents than in damage to the building. Equipment for conducting fire tests and impact drop tests of record containers has been in active use at the Bureau of Standards for the last two years, principally in testing devices submitted for Government purchase. The insulated safe shown satisfactorily preserved its

(*Continued on page 26*)

Property and Casualty Insurance

Side Lights on the Importance of Closer Understanding Between All Parties Connected With These Branches of Underwriting

By AVARD L. BISHOP

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IV.

THE FIRE INSURANCE CONTRACT

FIRE insurance is a business arrangement made between a fire insurance organization, on the one hand, and a property owner, on the other. It is customary for the insurer, through its agent, to deliver a policy of insurance to the insured which document sets forth the business arrangement entered into between the two parties. The policy constitutes, and is evidence of, the contract covering the transaction in question and is, therefore, a document of considerable importance. Few forms of contract are more commonly used in the modern business world. Most of its provisions are of long standing and have been interpreted by the courts. Accordingly, nowadays, all but an insignificant fraction of the settlements following a fire are adjusted without litigation. It has been claimed by one writer that from a study made of some fifteen hundred cases where the settlement of a claim was involved in each case all but fifteen were adjusted without an appeal to the courts. We suspect, however, that some of the settlements were scarcely amicable arrangements because of the lack of understanding of the contract by a considerable percentage of the insured.

For the sake of clearness, it will be well at the outset to resort to a definition of fire insurance. This is a business arrangement, evidenced by a contract of indemnity, sold by the insurer to the insured for a consideration called the premium, under which the insurer, in the event of a fire causing loss or damage to the insured's property as specified in the contract, agrees to indemnify the insured for his loss. The understanding is that the insured will be paid by the insurance organization that assumed the risk the money equivalent of the loss suffered as determined at the time when the loss took place, although, of course, the face value of the insurance policy is the upper limit that will be paid in the most extreme case.

The fire insurance policy as commonly used is a general contract drawn to cover hundreds of different cases. Accordingly, the printed part may be modified by attaching to the policy proper endorsements or riders which adapt the policy to the particular subject of insurance in any specific insurance transaction. The endorsements, when they differ from the regular printed text in the policy form, take precedence over the latter. In other words, they are commonly understood to be the latest arrangement made between the insurer and the insured. It is the purpose of this article to outline a few of the more important features of the fire insurance contract as used at the present day. Merely to touch briefly upon each important phase of the subject would require many times the space occupied by this article.

Making an inventory of household possessions is a duty often neglected, much to the annoyance and sometimes the despair of property owners when a devasting fire occurs.

THE earliest fire insurance contracts known date from 1667. The oldest policies were of relatively large size. Until the adaptation of the fire policy in size to conform with the normal sheet taken by the typewriting machine, the policies continued to be of substantial dimensions. Most observing persons who have had contacts with long-established real estate and insurance organizations will recall having seen one or more of these early policies adorning the walls of the business office of such a company. Usually, the top of the policy carried a picture of a building in the process of burning with the local fire department in action. English and American policies alike were of this general order and of large size until the latter part of the nineteenth century when the so-called standard policy form—standard both in content and size—was adopted.

There has been more or less change in the content of the fire insurance policy to adapt it to modern economic and industrial conditions. Nevertheless, early policies contained a considerable proportion of the important subject matter of the modern standard policy. For a long time the separate insurance companies worded their contracts, in a general way, very much the same, although there were certain varia-

tions which individual companies clung to, so that it would be a stretch of the truth to say that there was actual uniformity. This was brought about largely by state legislation. In certain states a specified standard policy form is made compulsory upon all companies doing business in that state. For example, the New York standard fire policy must be used in the state of New York and it has been legalized as the standard form in a considerable number of jurisdictions. Other states have their own standard policy. On the whole, it is fair to say that in most important respects, the various standard policy forms are much the same.

It is said that the first serious attempt to formulate and promulgate a standard fire insurance policy is traceable to the National Board of Fire Underwriters in the 60's of the last century. Among the earliest state laws requiring the adoption of a standard fire policy was that passed by Massachusetts in 1873, and a few years later this form was made compulsory upon all companies doing business in the State of Massachusetts. The New York standard fire policy, in rather common use throughout the eastern part of the United States, came into general use in the State of New York in 1887. A revision, important in certain particulars, was completed nearly ten years ago, the new New York standard policy being often called the Commissioners' policy. This form is used by a great many companies in all states where some other form is not specifically required by law. It is perhaps fair to say that the New York form has the most extensive use of any fire insurance policy, and it may therefore serve to illustrate in a general way certain important features of the present-day fire insurance contract.

Some writers are very insistent in specifying that a fire insurance contract is a personal one, meaning thereby that it is not the property specified in the contract that actually is insured. On the contrary, the policy insures the individual owner of such property or one who has an insurable interest in it. As suggested in the definition given above, the insured is indemnified personally for the loss suffered. The real significance of the idea of regarding the fire policy as a personal contract becomes apparent if the property happens to be sold, let us say, before the policy expires. It is a well-known fact that the company must give its consent to the continuance of the insurance when ownership changes, otherwise the insurance automatically terminates. This is a very sensible rule in such a matter because of the moral hazard involved. The present owner may be a good citizen worthy of being sold an insurance policy, whereas the new owner might be well able to pay for the purchased property, but he might be a doubtful person to insure for fire insurance.

ONE of the outstanding features of the standard fire insurance policy is that the insured does not stand to profit from a fire. The indemnity promised the insured is the actual cash value ascertained, with proper deductions for the deterioration of the destroyed or injured property, at the time when the loss or damage occurs. The amount recoverable cannot exceed the cost involved in repairing or replacing the risk with the material of like kind and quality. It is also to be observed that no allowance is made in this indemnity for any increased cost of building as a result of any local ordinance or law respecting building operations. For example, in certain parts of our cities no new building may be constructed of wood or may have a combustible roof. There are many old wooden buildings, however, within such localities (fire districts as they are often called). If one of these should be completely destroyed by fire and a city ordinance prevented replacement by a wooden building, the insurance company would not be bound to duplicate the wooden building with a brick or stone building because of any ordinance governing the building operations. The insurance company would, however, indemnify the insured for the actual loss suffered, and the money so obtained could be used by the insured to go as far as it would in constructing a new building in accordance with the building code.

Another feature of the standard fire policy that too often has been overlooked by the insured is that, without the attachment of a proper endorsement or rider and the payment of extra premium, the company is not bound to compensate the insured for losses resulting from interruption of his business should he have a fire on his premises. In other words, use and occupancy coverage, as it popularly has come to be called, is not provided in the standard policy form without the addition of an endorsement. With an increase in the public knowledge of the coverage actually given by the standard fire policy and its failure to give use and occupancy coverage, it has become easier for agents to sell use and occupancy insurance. Many a business has been wrecked through loss of profits on goods that might have been made had the fire not taken place. In some cases six months or a year or more may elapse before the factory is in shape for the resumption of manufacturing. The loss of profits during this period may be so great that the business concern may be seriously embarrassed, especially when it is found necessary to carry on the pay-roll a great many employees whom the concern would not wish to lose and when it is recalled that interest, compensation insurance, and other overhead charges must still be carried.

ANOTHER feature of the standard policy relates to the requirements that must be met by the insured in case of a loss. In general, the insured is required to notify the company in writing of the facts in the case; to take reasonable steps to protect the property from further damage; and then to furnish the company with a complete inventory of the destroyed property, of that which is damaged, and of that which is not damaged. The quantity and cost of each article and the amount that is claimed thereon must be itemized. Furthermore, the insured must, within a reasonable period, usually sixty days, furnish proof, under oath, of loss to the company or companies involved. The requirement as to inventory is a very important one and should be taken seriously by the insured. Those who understand the importance of this matter in the event of loss are in many cases either making a complete inventory of the insured property or are employing, before loss takes place, a responsible Appraisal Company to furnish such itemized lists. Householders, for example, who have valuable furnishings are often unaware of the present value of some of their possessions, and if required to furnish an itemized list of such property after it was destroyed would probably overlook many important items. The necessity of appraisal before the fire takes place can scarcely be exaggerated.

The question is sometimes raised as to whether or not an insurance company is liable for loss or damage in the event that a fire does not

reach certain injured property. With respect to this matter, it is fair to say that it is a well-recognized principle that if smoke or water resulting from a fire in a certain building should injure certain property in the same or adjoining building which was not actually reached by fire, the company would be held liable for such loss. This would be true especially if it could be established that the proximate cause of the loss was the nearby fire. Damage or destruction caused by the falling of walls where such fall was clearly traceable to a fire, also would be covered under the terms of the fire policy.

Lines twenty to thirty-one of the New York standard fire policy are of great interest and importance. They read as follows:

"This entire policy shall be void, unless otherwise provided by agreement in writing added hereto, (a) if the interest of the insured be other than unconditional and sole ownership; or (b) if the subject of insurance be a building on ground now owned by the insured in fee simple; or (c) if, with the knowledge of the insured, foreclosure proceedings be commenced or notice given of sale of any property insured hereunder by reason of any mortgage or trust deed; or (d) if any change, other than by the death of an insured, take place in the interest, title or possession of the subject of insurance (except change of occupants without increase of hazard); or (e) if this policy he assigned before a loss."

IN BRIEF, the reasons for the insertion of such reservations are not hard to seek. The necessity, from the company's standpoint, of a clear insurable interest on the part of the insured has already been stressed in a previous article. In a word, any ownership other than conditional and sole ownership, as applied to fire insurance contracts, may under certain circumstances increase the moral hazard with respect to the risk. The second reservation is designed, it would seem, to make sure to the insurance company the exact insurable interest of the insured. Moreover, there are probably circumstances that might arise when the moral hazard regarding a risk might be greater if the insured owner of a building did not own the land on which it was situated. One's interest in (or concern about) a building standing on leased land would not likely be very great as the date of the expiration of the lease drew near. The third reservation insures to the insurance company that it will, in the future, be given knowledge which it might wish to possess. The initiation of foreclosure proceedings or notice given of sale of mortgaged property presumably is likely to affect the moral hazard of the risk in the direction of increasing it. The fourth reservation contemplates a change which is likely to remain relatively permanent as affecting any policy in question. It might increase the moral hazard, or it might necessitate a change in the premium. Consequently, the insured should have knowledge of each change. The last reservation referred to above is necessary in order that the insurance company may sort out those with whom it may wish to deal. The policy contract after all is a personal contract and the insurance without the consent of the company does not follow the transfer or assignment to a third party.

It may be well to mention the fact that it is not always easy to determine what constitutes a fire within the terms of the contract. Those who have given attention to this technical aspect of the subject have distinguished between "friendly" and "hostile" fires. Loss or damage as the result of a friendly fire is not covered by the standard policy, whereas loss or damage by a hostile fire forms a part of the coverage. Technically, so long as a fire continues to be confined to the particular receptacle where it was expected to remain—in a lamp, fire-place, or oil stove, for examples—no fire within the terms of the contract has occurred; the fire has been a friendly fire. Where it passes beyond such receptacle and causes ignition or glow to other substances the fire is hostile. Sometimes the damage from a friendly fire is considerable, as the following case that came under the observation of the writer will illustrate. A small oil stove was lighted in a home in the late fall before the furnace fire had been started. It would seem that the wick was turned up too high, and while the family was absent from the room for a half-hour or more the stove became red hot and smoked greatly. All the furnishings in the room were practically ruined with the soot. Walls had to be completely re-decorated, the rugs had to be sent to the cleaners; the same was true with the curtains; and chairs and other furniture had to be restored or renewed. Similar but less serious damage was suffered in adjacent rooms. It cost several hundred dollars to put these rooms in proper living condition, but the fire in question was a friendly fire because it never left the receptacle in which it was kindled, and although the house and contents were covered with fire insurance, no recovery could be had under the terms of the policy. If the burner had been near enough to the curtains so that they would have caught fire and the room thereby gutted, this would have been a hostile fire and such loss or damage resulting from the hostile fire would have been recoverable from the insurance company under the terms of the contract.

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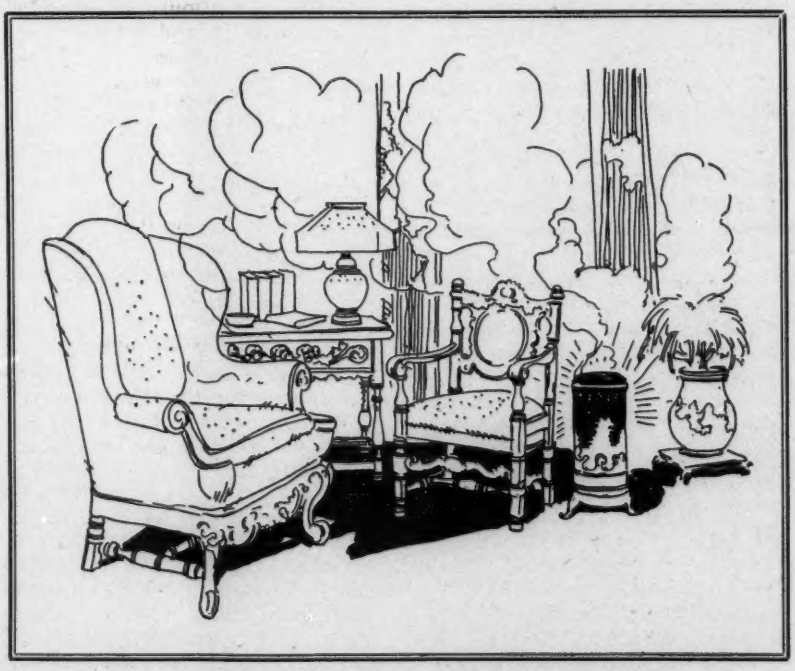

There Is a Great Difference Between "Friendly" and "Hostile" Fires

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The Hazards of the Air

ONE of the most interesting, we may almost say one of the most adventuresome problems which insurance theorists and experts have had to consider is that which faces them in the development of aviation. Inevitably there must be created a new department of casualty insurance devoted to the hazards of the air. A sphere of human activity destined to play so large a part in the progress of the race cannot escape the attention and the provision of those who are engaged in lessening the burden of hazard which is incident to life.

But here there enter into the science of insurance factors which have never been dealt with before, or at last have never been dealt with in the exact fashion in which they are now presented.

The increasing use of the airplane has brought to light a new field of peril, a new set of perils. It offers opportunity for actuarial research and calculation which should prove vastly intriguing to the men who use figures with intelligence, who plot curves and build tables which give sound guidance to those of less mathematical mind and attainment.

INSURANCE must keep pace with the march of civilization, even when that march leads into unexplored realms and promises an encounter with hitherto unknown risks and dangers. It has been characteristic of insurance to follow the trail of the pioneer. It has followed him on land and on sea; it has protected the engineer with his hand on the throttle of the locomotive, and the mariner with his hand on the wheel. It has followed the man who went into the region of tornado or earthquake, and dared the elements in order to make the soil blossom with harvest of yellow grain, or the purple fruitage of the vineyard. It cannot fail to follow him as he soars where once the eagle was lord of all he surveyed.

But it must follow with forethought and careful consideration of all that is involved. The element of forethought is the fundamental element in all sound insurance. It must bring the hazard of flight within that region of the predictable which it has made peculiarly its own.

There are the hazards of any mechanism, power-propelled. With these, in some degree, the automobile has made us familiar; but there are perils here peculiar to the powerful motors which drive at a speed far beyond that of any land-traversing vehicle. This element of greater speed is itself one which makes the problem more complex, and while, as yet, the risk of collision—so important a risk in motor travel by land—plays small part in air-travel, the time must come when it will be a consideraton of moment. Then, too, there are the problems of structure and strain on wings, and the other parts of the plane's framework.

FURTHER there are the wholly new problems which this method of motion in a novel and tenuous medium involves, such as the pockets and dead spaces of the air, for which there can be no warning buoys like those we place on reefs and shallows at sea. And the storms of the higher atmospheric levels—storms which may vary with the varying contour of the earth beneath, with the flat of prairie or the welling lift of mountain range, with the broken surface of the land, or the wide sweep of unbroken sea; that may vary with degrees of latitude and longitude, with distance north or south of the equator.

We have barely touched the edges of the problem; we have merely indicated something of its nature. But enough has been said to make clear that a new chapter in the science of insurance is beginning, a chapter of fascinating interest. Now, if you have not yet done so, turn to the article in this issue of the Journal of American Insurance entitled "Development of Aviation Insurance" and read it. As usual we bring this magazine abreast of the latest in its field by publishing this most informing discussion. The writer, Professor Stephen B. Sweeney, knows his subject better than any other man probably. As well, indeed, as it may be known at this stage in our evolution skyward.

Getting Back on the Job

THE vacationists are getting back to their desks. You can meet them at every terminal, loaded with the impedimenta of holiday-making, trailed by wives and children.

If they have spent the season of escape from toil wisely they are bronzed or burned by sun and wind; some of the wrinkles have been smoothed from furrowed brows; the tired look has vanished from their eyes, and a little of that ranging vision which comes from having lived a while in a region of wider horizons, where the meeting of earth and sky is visible, has taken its place. Nerves are less taut; in spite of the fatigue of the home journey, the step is springier.

A vacation, as we may have observed before in these columns, should be, what its name implies—a vacating; that is to say an emptying of the cares and worries which work has accumulated, and then a filling with calm and rest and invigoration which none knows so well how to give as Mother Nature.

THE Journal of American Insurance hopes you have had just such a vacation as this, and that you come back to the desk, or whatever holds like place in your routine program, with a sense of zest and eagerness. The world of work awaits us all, and there is nothing more interesting than work if we are tuned to it; but we need regular tuning times.

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Life-Lights Against a Business Background

Automobiles and Legs

By S. J. DUNCAN-CLARK

I SUPPOSE I ought to be ashamed to confess it, and yet, after a fashion, I glory in the fact — I am one of the few men left in this super-civilized world who do not own a gasoline-propelled vehicle, or, indeed, a vehicle of any other sort than the legs the Good Lord gave me.

I am writing this article on my vacation. I am seated at a desk-like shelf in a corner of a wide porch, perched on the slope of a dune. Spreading downward from the cedar-post props of the porch is a carpet of withered oak-leaves and pine needles, an intriguing pattern of red and ochre, with green interwoven. From this carpet, on which the sun has designed an over-pattern of light, rise the perpendicular and gently slanted lines of oak and pine trunks. Thru the mesh of them I can see the glow of an open space, where shades of orange red and yellow and deeper tints of violet lie in the yellow-green of the grass. And beyond that again is the hint of a ribbon of blue, where the river winds, and further away still a mass of darker blue outlined against the cloudless cerulean of the sky. It is a high, pine-covered dune.

It is this colorful panorama of beauty which inspired the things I am about to write. As I took my little portable typewriter from its case and prepared it for action my eyes wandered over the landscape—familiar, and yet unceasingly new and interesting, and I thought how I had come to love it by walking hither and thither in its world of charm. Thus I have come to know it. Thus I have discovered—thus I am continually discovering—interesting, wonderful, consummately lovely things. I know points where I always pause and go into the reverie of a long gaze. These places of contemplation multiply as I wander over this domain.

And I have my legs to thank for that. They suit their pace to the mood. I do not have to jam down brakes upon them, or put blocks of wood behind them to keep me from sliding down some steep ascent they have been climbing. They can go where no wheels can ever go, no matter what the pressure of gas propelling them.

I HAVE neighbors in this enchanted land who own cars, and who are forever getting into them and hurrying back and forth upon the highway, going somewhere and coming back again—mainly to the neighboring town where there is a garishly lighted dancing pavilion, a movie show, a drug store with the inevitable soda fountain and little tables where people gather and eat ice cream. My neighbors do not know the things I know about this realm of beauty. In a general way they recognize its beauty, but the special and particular beauties are not revealed to them—they go too fast, and they must, perforce, hold to the beaten track of the road. They do not even know, except in the same general way, the beauties of that often traveled road.

Twice only since I came here—three weeks ago—have I been to the town, and both times I went afoot, there and back again. I venture to say I saw more in those two times than my gas-hurried neighbors have seen in twenty. The last time I went, as I emerged from an avenue of over-arching pines and oaks into a sudden clearing at a bend in the road, there fell upon my gaze a sight which made me gasp for its sheer exquisiteness of beauty. I was on the edge of a dune which drops sharply to the river. My eye carried across the blue intensity of the winding band of water to the softer green of the farther shore, and then up into the sky. There, piled fantastically, in forms of exciting interest, was a cloud formation such as one sees rarely on summer days. I cannot describe it. The picture cannot be delineated in words. But it thrilled me with its utter loveliness. And there and then I thanked my legs. This was something I would not have seen in an automobile. Or, had I glimpsed it, the vision would have been gone before I could drink it in.

AND there is another joy in the use of these scissor-like extremities—the joy of feeling the earth beneath my feet. I want no cement roads on which to travel. You with the balloon tires under you—you can have the cement roads; give me the pine carpet of these woods with their varying shapes and shadows, or the spring of the sod, or even the soft-sliding of the sand on the dunes. It is all better, vastly better, than the city pavements, or the monotonously smooth surface of M11 or whatever other algebraically symboled and unyielding trail of civilization you may choose for the frantic spin in the family bus.

Eleven months in the year I daily travel from here to there and from there to here. I am always going somewhere and back again; but for this one month—thank heaven—I go from anywhere to nowhere and return to anywhere. My legs can do that. They are admirably suited to that. I do not even doom them to wandering around eighteen holes. They may wander about eighteen hundred holes and hills, humps and hollows, and the eyes which go with them will find more interesting things than little, sterile spheres which must be forever driven away and sought again—yes, and the ears which accompany will hear more interesting things than the shout of "Fore!" or the profanity of some exasperated individual who cannot find his precious globule in a clump of ferns, the beauty of which is lost upon him.

I WONDER sometimes whether the coming generation will retain the use of its legs. I am convinced it is losing appreciation for their value. And yet I am not so hopelessly biased in favor of pedestrian locomotion that I cannot see the occasional usefulness of a car. There are times of emergency when getting from here to there is more important than seeing what lies between, and in such times, I must admit, gasoline serves a purpose which the motor energy of my legs is not capable of serving as quickly and efficiently. Truth to tell I am indebted to my neighbors who own cars, even tho I feel sorry for them that, still owning legs, they are forgetting for what the Lord intended them.

It is quite probable that when I have finished this article, written leisurely while my eyes turned from the keyboard to feast upon the scene which stretches out before me, some kind friend with a car will make it possible to catch the last mail to Chicago, and so save the JOURNAL'S editor from twelve hours of uneasy waiting and the cost of overtime composition.

Aviation Insurance

(*Continued from page 7*)

the field of aviation insurance. This is true from the standpoint of the operator as well as the underwriter.

AS WILL be seen in later articles, the underwriter must investigate every possible phase of the risk before issuing policies covering most of the hazards referred to above. This means that in this country the restrictions of the state insurance laws cause a tremendous and unnecessary duplication of underwriting operations.

In Europe they write one policy usually and one investigation suffices. This should make possible a really extensive investigation and more continuous checking up on facts ascertained. Since the American underwriter must compete with the Europeans, it would seem that he has to restrict the extent and thoroughness of his investigation of a risk, as he has a smaller premium over which to spread this expense. Likewise it seems that he cannot afford the constant checking up that his multiple line competitors can afford, assuming that he tries to make the gross premium truly represent an accurately loaded pure premium. The result is obvious. The monoline underwriter suffers a distinct competitive disadvantage compared with his multiple line associate. (This disadvantage has been and may be overcome, however, by the cooperation of underwriters in pools for the exchange of information, such as the National Aircraft Underwriters Association described hereafter. Some American brokers claim that the disadvantage is only an apparent one because it is not affirmed by consistently higher premiums on the part of American underwriters. Logically, however, higher premiums would be necessary eventually.)

Aircraft operators are usually unlearned in the ways of insurance. They merely know that there are many hazards and that general business practice dictates that they pass on as many of them as possible to the shoulders of some risk taker. It is only natural for them to welcome the opportunity to purchase a so called "All Coverage Policy." This gives them a single premium, or two at the most, which they must take into account in their cost of operation estimates. If getting coverage here, there and everywhere is confusing, the main saving feature in the American situation is that most of the business goes through the broker, as in marine insurance. The insurance broker seems indispensable where many complex coverages are required.

Some of the larger underwriters attempt simplification. Many fire and fire-marine companies have affiliated indemnity companies, which fact enables them to follow the same practice in aviation insurance that they follow in their automobile business. They have separate policies for each of the legally allowed groups of hazards but they issue these policies attached to each other. Thus they are able to quote a combined premium which covers most of the hazards of the operator. It must not be supposed, however, that this practice has entirely simplified the American situation. The great majority of the American companies have refused to insure many of the hazards which are legally open to them.

Property and Casualty Insurance

(*Continued from page 15*)

IN CONSIDERING the meaning of the fire insurance contract in any particular case, it is well to remember that the agreement entered into between the insurer and the insured as embodied in the fire insurance policy is not necessarily final; it is subject to the laws of the particular state where the contract is made. It should always be held in mind that, as a general proposition, the state laws with respect to insurance take precedence over the specific terms of the contract itself. This being the case, when a matter involving the fire insurance contract gets into the courts the contract is likely to be interpreted in the light of the state law governing insurance. Consequently, it is difficult as a general proposition to determine what the law is on any technical point in insurance; and it is probably well within the truth to say that, as a rule, courts of law, in cases of reasonable doubt, have been inclined to favor the insured rather than the insurance company or companies involved.

Washington Convention

(*Continued from page 8*)

Eighth and K Streets; Rawlins Square, at Eighteenth and E Streets; Stanton Square, at Fifth and C Streets; and McPherson and Farragut Squares, at Fifteenth and Seventeenth and I Streets, respectively, are the larger parks in the northwestern section of the city.

EAST and south of the Capitol may be found Folger Square, at Second and D Streets; Garfield Park, at First and E Streets; Lincoln Park, at East Capitol and Twelfth Streets; and Marion Park, at Fifth and E Streets.

The prominent Circles are as follows: Dupont Circle, Nineteenth and P Streets; Iowa Circle, Thirteenth and P Streets; Scott Circle, Sixteenth and N Streets; Sheridan Circle, Twenty-third and R Streets; Thomas Circle, Fourteenth and M Streets; and Washington Circle, Twenty-third and K Streets.

In the suburbs, in addition to the National Zoological Park, of which mention is made elsewhere, there is the Rock Creek Park, located between the Naval Observatory and the Zoo, and Chevy Chase, a public park quite a little distance out on Georgetown Heights.

Potomac Park, lying south of the Mall alongside the river, is a beautifully laid out pleasure resort. In recent years a large number of Japanese cherry trees have been planted in this park, the beauty and profusion of whose blossoms are a noteworthy feature, worthy of visit in the early springtime season of the year.

THE United States Naval Observatory is located on Georgetown Heights, just outside of Washington. One may wander around freely and inspect the various instruments by which standard time is given to every point in the United States.

An interesting sight is to see the time ball dropped from the flagstaff at noon each day, showing the exact time the sun crosses the meridian of Washington. At the exact moment noontime is transmitted by telegraph to every part of the country, the telegraph companies suspending operations for the space of three minutes in order to have an uninterrupted circuit.

One of the largest telescopes in the world, a twenty-six-inch equatorial, costing $56,000, is located in this observatory and is an object of curiosity and admiration to those interested in astronomical observations.

THE National Cemetery at Arlington, containing 408 acres, is located on one of the most beautiful sites in the country. The old Vir-

(*Continued on page 29*)

The Rainfall Hazard

Fundamental Factors Related to This Weather Risk and Their Practical Application to Underwriting

By COLONEL JOHN P. FINLEY

Consulting Meteorologist and Manager National Storm Insurance Bureau, New York City

Article IV. Rainfall Diurnals.
SIXTH SECTION.

IN PLATE NO. 1, Article III, Rainfall Types, appearing in the January, 1927, edition of this Journal we exhibited the paths and direction of progressive movement of the various types of Cyclonic Lows that enter the United States. We discussed their salient features as rain-producing Lows and as establishing the storm lanes over which Rain Areas progress from west to east across the country. In the present article we aim to trace the origin and place of birth of these rainfall types, as an integral part of the system of atmospheric circulation prevailing over the northern hemisphere.

Atmospheric circulation in the southern hemisphere, while fundamentally similar to that obtaining north of the equator yet presents local geographical peculiarities which demand separate consideration. In this connection it must be kept in mind that about three-fifths of the water area of the earth, 139,645,000 square miles, is found in the southern hemisphere. The approximate water and land areas of the northern and southern hemispheres are relatively as follows: Northern hemisphere, water area, 55,858,000 square miles, land area, 38,170,000 square miles. Southern hemisphere, water area, 83,787,000 square miles, land area, 19,085,000 square miles. The water hemisphere of the earth contains 139,645,000 square miles and the land hemisphere 57,255,000 square miles.

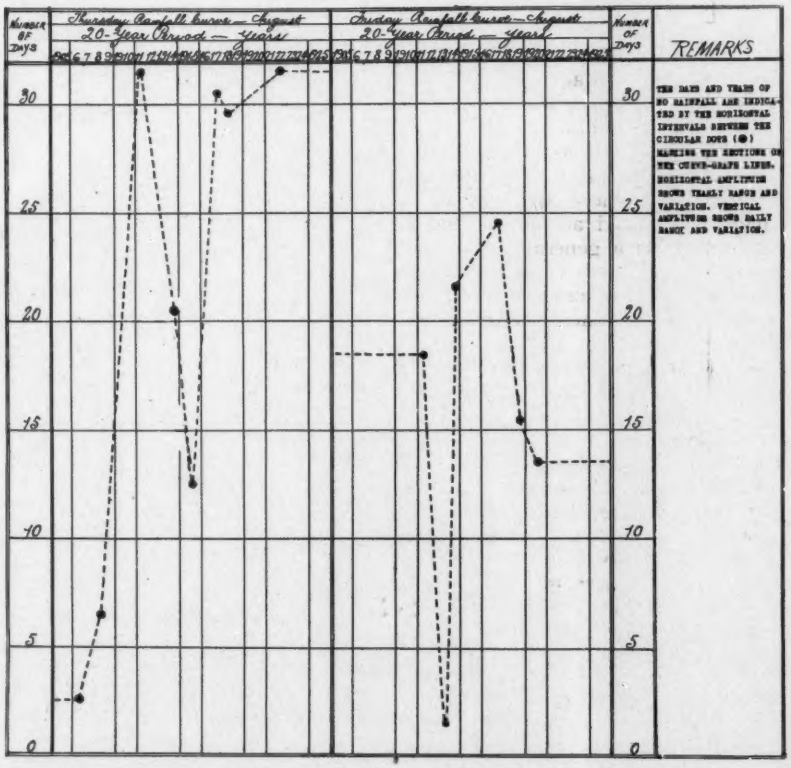


PLATE No. X.—Daily Rainfall Curves—August. For the Crucial-7-Hour Hazard 2 P. M. to 9 P. M. and the Crucial-Wetting-Loss-Hazard of a Tenth of An Inch or More.

Observations Made by Automatic Self-Recording Raingage and Checked with a Non-Measurement-Non-Recording Raingage. Both U. S. Weather Bureau Standard Instruments Located on the Roof of the Station Building, New York City, 304 Feet Above Sea-Level. The Circular Dots (●) in the Rainfall Curves Mark the Day and Year of Measured and Recorded Precipitation. The Curve-Graph Lines are Formed on a Uniform Basis and Progress from Left to Right in Regular Sequence.

SUCH a distribution of land and water over the globe exerts a pronounced influence on atmospheric circulation. The land areas react upon the water areas and both affect the movements of the atmosphere resting upon them. Differences are created that give rise to varied climates and these in turn determine the distribution of vegetation and crops, from which follows differences in the races of man, in the manner of eating, living and working. The movements of the earth in relation to the sun give rise to other differences that combine with the land forms and water bodies to influence vegetation and the ways of mankind throughout the habitable globe. One set of differences in the realm of nature hinge upon another set and the multitude of combinations resulting account for the many diversities of organic life. What would be the effect on such life in the event of the disappearance of all of the larger bodies of water and the reappearance of corresponding land areas? The varied and useful riches of nature would be immeasurably reduced and animal life would suffer in proportion. The five great features of physical environment, location, land forms, bodies of water, soil and minerals, and climate would be greatly modified with serious reaction upon human existence. Climate alone determines the character of plant and animal life in different regions. It varies the sources of food supply in different latitudes and controls man's energy and output in all parts of the earth. The occurrence and distribution of rainfall enters this calculation with significant and momentous force.

In viewing with analytical purpose the existing diversity in the physical features of the earth we hark back to the very origin of organic and inorganic life thereon, and even further back, under the Law of Differences and Mutual

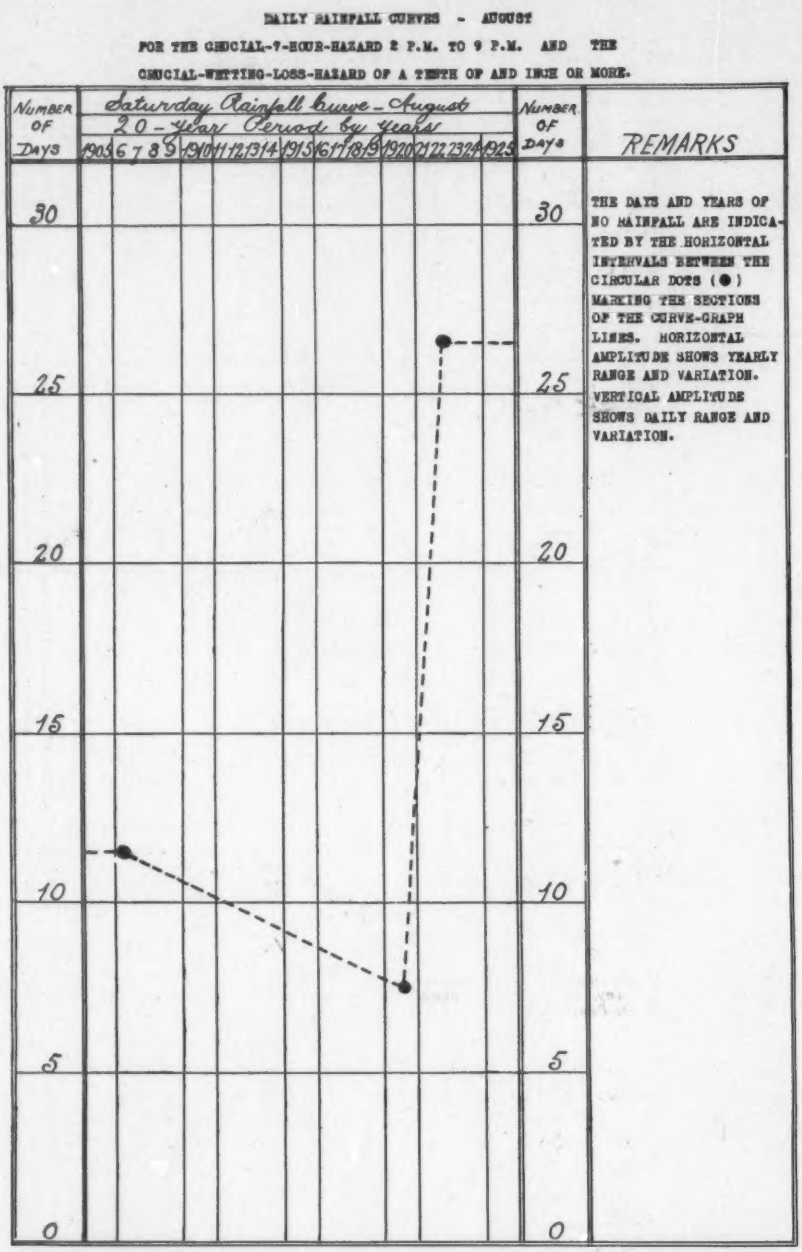

DAILY RAINFALL CURVES - AUGUST
FOR THE CRUCIAL-7-HOUR-HAZARD 2 P.M. TO 9 P.M. AND THE
CRUCIAL-WETTING-LOSS-HAZARD OF A TENTH OF AND INCH OR MORE.
NUMBER OF DAYS
Saturday Rainfall Curve - August
20 - year Period by years
1906 7 8 9 1910 11 12 13 14 1915 16 17 18 19 1920 21 22 23 24 1925
NUMBER OF DAYS
REMARKS
30
25
20
15
10
5
0
THE DAYS AND YEARS OF NO RAINFALL ARE INDICATED BY THE HORIZONTAL INTERVALS BETWEEN THE CIRCULAR DOTS (●) MARKING THE SECTIONS OF THE CURVE-GRAPH LINES. HORIZONTAL AMPLITUDE SHOWS YEARLY RANGE AND VARIATION. VERTICAL AMPLITUDE SHOWS DAILY RANGE AND VARIATION.

PLATE No. XI—Observations Made by Automatic Self-Recording Raingage and Checked with a Direct Measurement-Non-Recording Raingage. Both U. S. Weather Bureau Standard Instruments Located on the Roof of the Station Building, New York, 104 Feet Above Sea-Level. The Circular Dots (-) in the Rainfall Curves Mark the Day and Year of Measured and Recorded Precipitation. The Curve-Graph Lines are Formed on a Uniform Basis and Progress from Left to Right in Regular Sequence.

Exchanges from the brilliant hypotheses of Laplace and Herschell, supplemented by the vast researches of Von Humboldt, to the primeval chaos where all the elements of life are in the first stage of organization and are confounded together. Then follows development where all is separating, succeeded eventually by unity where all is binding itself together and organizing; the egg in organic life and the atom in inorganic existence.

Thus we observe that here is the law of phenomenal life, the formula of development. The differences are the condition of development. The mutual exchanges, which are the consequences of these differences, awaken and manifest life in it various forms. The greater the diversity of the elements or organs, the more active and the superior in its nature is the life of the individual, whether organic or inorganic. The greater the variety of individualities and relations in a society of individuals, the greater also is the sum of life, the more universal is the development, the more complete, and of a more elevated order. But it is necessary, not only that life should unfold itself in all its richness by diversity, but that it exhibit itself in its utility, in its beauty, in its usefulness, by harmony. Thus we recognize the truth and the proof of the old proverb, "variety in unity is perfection."

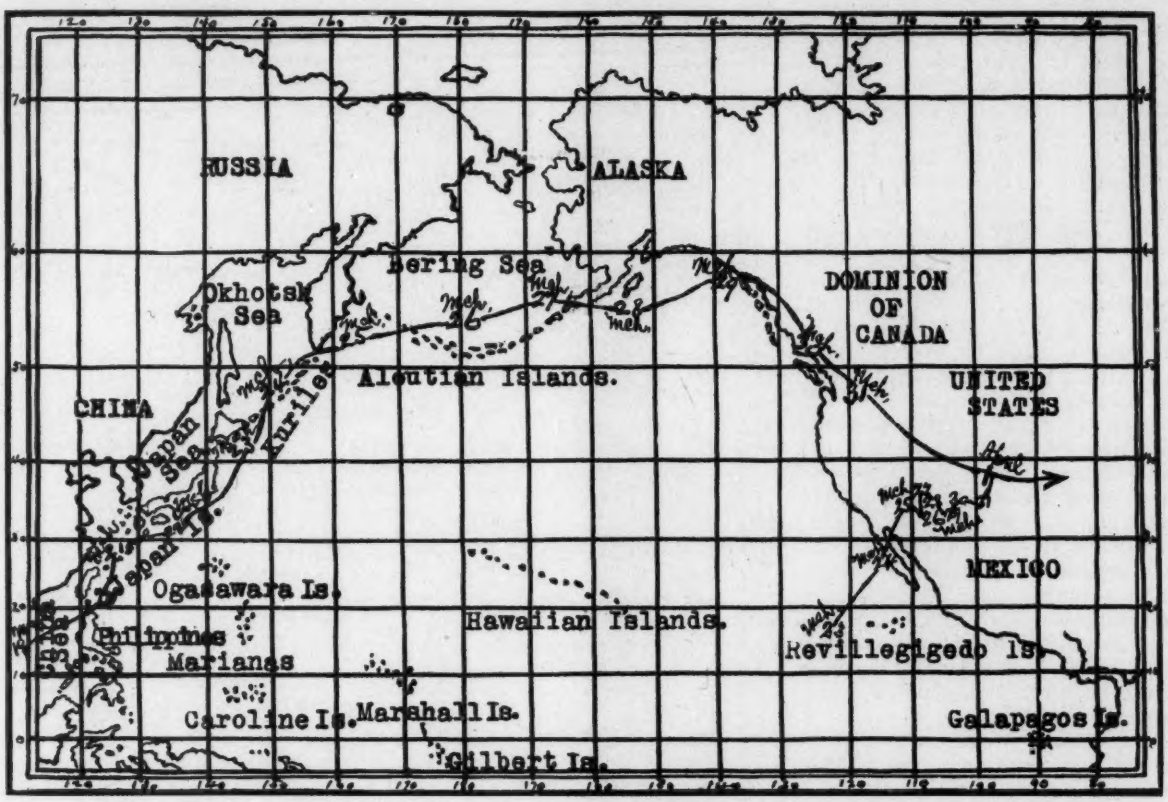
As such is the law of life in all beings, it ought equally to be the law of life of our entire globe, collectively considered as an individual. We are tracing the origin of what we find to be the actual distribution of the primeval elements of land, water and gaseous matter, otherwise termed the geosphere, hydrosphere and atmosphere of the earth.

THE volume of the earth contains 259,880,000 cubic miles, with a mean density of 5.5 and a mass of six sextillion tons. The volume of the water area is about 300,000,000 cubic miles. The mass of the water area is 1/4540 of the earth, and the mass of the atmosphere is 1/1200000 of the earth. The pressure of the superincumbent atmosphere, over the level surface of the ocean, would everywhere be equal if there were no disturbing forces present by which a larger portion of the atmosphere might be accumulated in one region than in another. The atmospheric pressure over the land depends upon its elevation above the general level of the sea.

The height to which water will rise in a pump, the piston of which removes the downward pressure of the air, is about 34 feet at sea-level. As the weight of a cubic inch of water is 0.036 of a pound, the pressure of the atmosphere on a square inch of surface at sea-level is 14.7 pounds, or about a ton on a square fooot. If the air were uniformily dense at all altitudes the upper surface of the atmosphere would be found at the height of about five miles, but owing to the effects of solar and terrestrial radiation traces of the atmosphere may be found at a height of 45 to 50 miles.

The solid crust of the earth has been gradually strained and crushed into the uneven surfaces

PLATE No. XII.—Rainfall Type-Paths on Ten-Degree Square-Mercator's Map-Projection Cyclonic-Path-Chart Showing the Breeding Places of Storm Lows in the China Sea and in the Revillegigedo Islands, Giving Rise to Rainfall-Type-Lows from the Pacific West and the Pacific Southwest, with the Point and Line of Direction of Entrance Into the United States.



Daily Progressive Movement and Diagrammatic History of the Cyclonic-Low-Storm-Path Beginning March 19th, 1927, in the Typhonic Doldrum of the China Sea and Passing Thence Northeastward Via the Warm-Japan-Sea-Stream, the Kurile and Aleutian Island Groups, to Alaska, British Columbia and the United States, Arriving in the Mississippi Basin on April 1st, 1927. This Cyclonic Disturbance Was Supplemented by Another Low from the Hurricane Doldrums of the Panama Isthmus and the Revillegigedo Islands of the Equatorial-Pacific, Beginning March 23rd, 1927, and Entering the Mississippi Basin on April 1st, 1927, Developing a Storm and Rainfall Area of Marked Intensity, Augmenting the Flood Crests in That River. This Plate Should Be Studied in Connection with Plate No. XII of Article IV, Rainfall Diurnals, Fourth Section, Appearing in the July, 1927, Issue of This Journal.

of continents and mountains, and further modified by the ceaseless effects of atmospheric changes. The liquid hydrosphere is put in motion by centripetal (terrestrial gravitation) and centrifugal (earth's axial rotation) forces, with the surface appearing everywhere at right angles to the force acting on it. These forces bring the molecules of the atmospheric envelope nearer together and counterbalance its unlimited expansion. This approximation allows the molecular interaction of the gaseous envelope according to the chemical affinities of the different elements. Herein the process of life begins and its earliest manifestation is light and heat. Under the action of this mighty chemical and physical life there results the three fundamental forms of gaseous, liquid and solid matter. Through the process of this admirable simplicity the earth begins to sustain organic and inorganic life, promoted by the dominating influence of the law of differences and exchanges. All animal and vegetable life will thrive best under diversity and change, the greater the better.

THE general phenomena of the life of the globe are converted into useful forms by the law of contrasts that harmonize the sources of a multitude of vital actions arising between the continental and oceanic masses or the land and water hemispheres. These oppositions naturally and eventually resolve themselves into full and complete harmony, wherein each continent or zonal area has its part to perform in the conservation of energy and in the fulfillment of the mission of oceanic and terrestrial life.

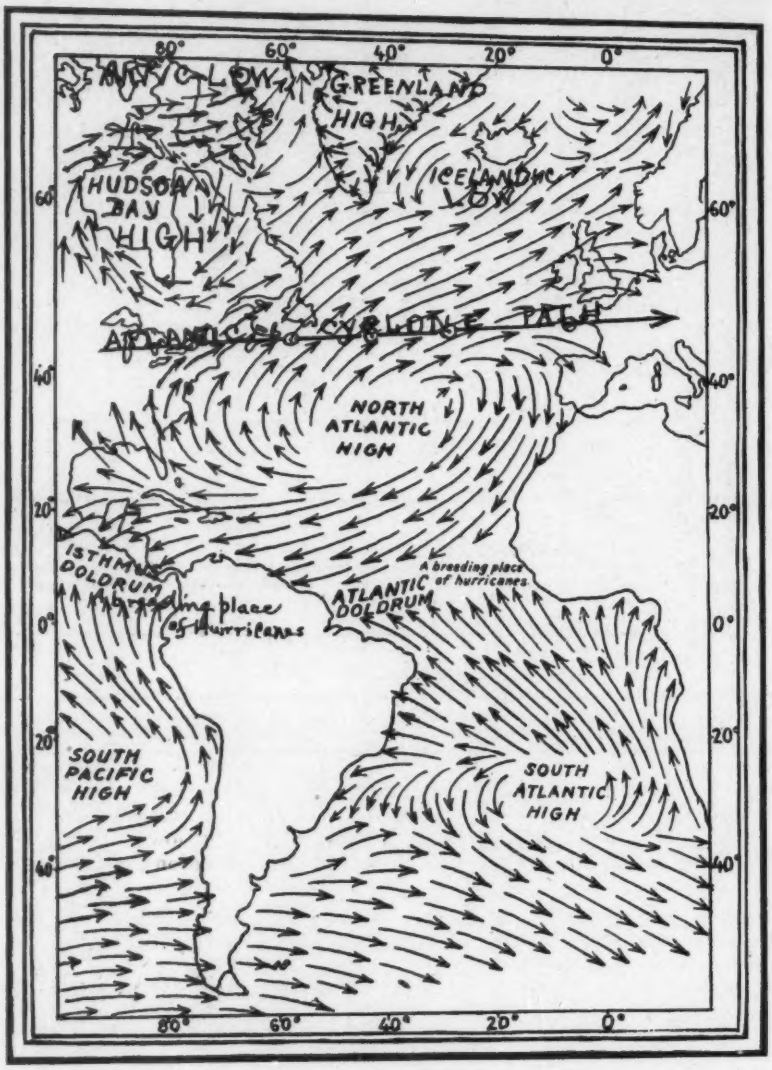
In the comparison of the water and land areas we have found the former to largely outrank in area the latter, but in the variety, quality and usefulness of life the land areas become superior to the water areas and they therefore appear physically in the relation of superior and inferior.

The terrestrial element has for its portion an infinite variety of the forms of relief of climate, and it is the seat of a more varied life; the birthplace and abode of all the superior beings, from the vegetable up to man. The ocean has uniformity for its characteristic; it is the domain of the inferior beings, from the polyp to the fish and the amphibious animal. Thus we have to observe, in the geological development of the surface of the globe, the oceanic element first prevailing and as the less perfect, in comparison with the continental element. The oceanic epoch is the embryonic epoch; the insular epoch, analogous to the present oceanic world and its cli-

mate, is the second step in the physical life of the globe; the continental epoch, or the present epoch, alone carries it to the highest degree of development.

While the ocean much surpasses the continents in extent, occupying more than two-thirds of the globe, yet it is the sign of inferiority, for mass and number in all the kingdoms of nature, never belong to the superior being. In their characters and in their contrasts the continental hemisphere and the oceanic hemisphere, do not remain indifferent, for they act and react, and impart their wealth to each other. To the ocean we owe the cyclonic lows of the atmosphere that provide the beneficient rains that refresh and vivify all nature; those springs which quench our thirst; those streams and rivers which fertilize our valleys and our plains, and serve as highways for the commerce of the nations; those lakes that spread so many charms over the countries encompassing their borders. Thus the ocean becomes the supporter of the continents, for if the ocean failed to supply the water necessary to their daily life, the parched and arid earth would soon observe all of the organized beings that exist upon its surface perish in pain and anguish. Desert and death would succeed to life, and at a single stroke the globe would return to the embryonic state of the trilobites, by the extinction of the superior classes of beings.

PLATE No. XIII.—The System of Atmospheric Circulation Over the North and South Atlantic Oceans with a Section of the South Pacific Ocean Arranged to Exhibit the Breeding Places of Hurricanes in the Two Oceans and in the Two Americas at the Atlantic and Panamanian Doldrums. From These Centers Storm Areas Develop and Penetrate the United States Attended with Heavy Precipitation, Floods and Destructive Winds.

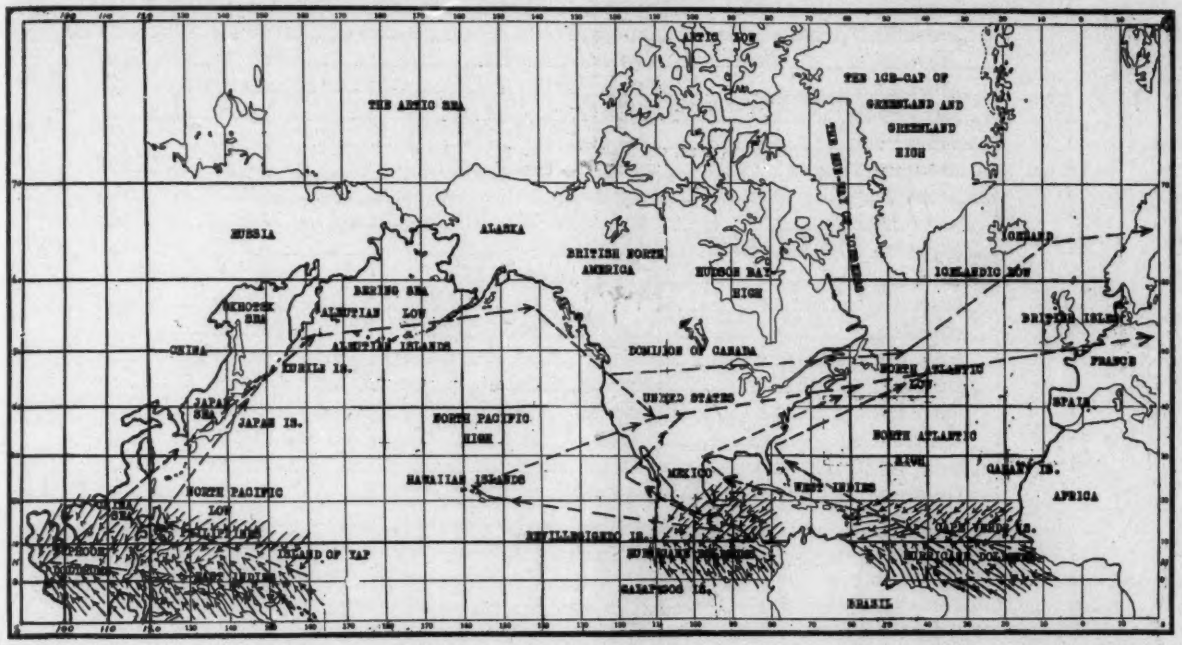


A Cartographical Distribution of the Permanent Areas of High and Low Atmospheric Pressure with the Prevailing Air Currents About Them in the North and South Atlantic Oceans and in a Section of the South Pacific Ocean. The Greenland and Hudson Bay Highs and the Artic Low are Closely Associated with the Ocean Areas. The Direction and Location of the Atlantic Cyclone Path Is Indicated. These Highs and Lows are the Sources of Daily Weather Changes Over the Areas Covered by Them and Materially Affect the Weather of the United States.

AS a matter of fact all the continental waters come to us from the ocean. If they are fresh and sweet, it is because they have passed through the great laboratory of nature by the simple process of distillation as one of the reactive functions of the continental areas. The sun, the great awakener of life, the king of nature, projects his burning rays every day athwart the face of the waters. He causes the invisible vapors to rise, which, lighter than the air itself, unceasingly tend to soar into the atmosphere, filling it and constituting within it another aqueous atmosphere. In their ascending movement they give rise to cyclonic circulation which maintains the conditions neccssary to the production, through the process of condensation, of all forms of precipitation, both liquid and solid, in the form of clouds, fogs, mist, hail, rain, sleet, frost and snow. All the portion of the atmospheric waters not expended for the benefit of the plants and of the animals, nor carried off anew into the atmosphere by the process of evaporation, return by the springs and rivers to the ocean, whence they came. Thus the waters of the ocean, by this ever renewed rotation, spread themselves over the lands and thereby the two elements combine, and become a source of life, far richer and much superior to what either could have produced by its own forces alone.

But we observe the earth and the water, the continents and the oceans, touch each other only at their margins. A more intimate action upon each other is not possible, except through the means of the most mobile of the elements, the atmosphere, performing in nature the part of mediator. The winds are the instruments of this important work, the bearers of this

PLATE No. XIV.—A World Map Distribution of the Breeding Places of Storm Production Centers, the Location of Those Centers and the Average Courses of Progressive Movement of the Cyclonic Areas Developed at Those Centers. Also the Location of Permanent Areas of High and Low Atmospheric Pressure that Cooperate in the Development and Progress of Storm Cyclonic Areas.



The Paths of Progressive Cyclonic Development are Indicated by Broken Lines and the Centers of Storm Production are Marked as Hurricane Doldrums in the Atlantic and Eastern Pacific Oceans and As Typhoon Doldrums in the East Indies and China Sea. The Places of Origin of the Cyclonic Storms in the Various Belts of Tropical Contrary Winds on the Earth are Thus Disclosed as the Primal Sources of the Storm Areas and Rainfall Cyclonic Types that Sweep the United States from West to East.

wondrous water which renovates unceasingly the face of the mainlands and sustains their beauty. We thus observe that the atmosphere alone can perform the invaluable and indispensable service of bringing the oceanic and continental hemispheres into that mutual relation which spreads fertilization and life over the latter and completes the round of economic nature. The vapors fly on the wings of the winds to the very heart of the continents.

In this transformation of the vapor of water into all forms of precipitation we engage in a study of the occurrence and distribution of rainfall as one of the essential features of the climate of continents, involving as it does a consideration of the general system of the winds as it is revealed through the cyclonic and anticyclonic circulations of the atmosphere.

IN the analysis of this subject we come face to face again with the primeval law of differences, diversity, opposition and exchanges first recognized by Laplace and Herschell. All animal and vegetable life demand changes. If animals are fed absolutely the same food day after day they do not thrive as upon the consumption of varied food and balanced meals. If plants are kept at the optimum temperature continually they will not develop as by the influence of a succession of alternating high and lower temperatures. The formation and passage of cyclonic storms is manifestly beneficial by alternating the occurrence of sunshine, clouds and rain, and the variation of wind direction and velocity. An indispensable requisite for the progress and fulfillment of all vegetable and animal life is rotation and frequent changes of all sorts, avoiding the extremes but increasing the repetition. Therefore those countries lying in the regions of constant cyclonic storms are especially fortunate in being provided with changes of the weather every few days.

We have now learned, through the existence and operation of the primeval law of differences, exchanges, oppositions and contrasts, the following important and vital facts in connection with the interaction of the fundamental elements of our planet, consequent upon the existence of its hemispherical sides of humid, aqueous, in opposition to the solid, terestrial portions, suspended together in a highly mobile gaseous envelope, technically expressed, severally as the hydrosphere, geosphere and atmosphere.

We have explained the reasons that have led us to show how the general phenomena of the life of the globe takes its source in certain great contrasts, of which we have especially distinguished the three above mentioned, which are all important and fundamental. These elements involve the relation of the continental hemispheres as opposed to the oceanic; land areas as opposed to water areas. The geosphere as opposed to the hydrosphere. Only in combined action are the three elements successful. They cannot function fully independently, and, in the absence of the supervisory influence of the atmosphere, the remaining two elements are nerveless and dead. It has been clearly shown that the rain supply must come from the oceanic areas, and not from the continental areas; that our cyclonic storm LOWS develop over the oceans and not over the land. While passing over the land these LOWS may be delayed, hastened, sub-divided, elongated, filled-up, changed in progressive direction, increased in depth, accompanying precipitation increased, diminished, stopped, and changed in form.

PLATE No. XV.—The A. M. Rainfall and Weather of 1907 for August at New York City, N. Y.

	DAYS OF MONTH	TIMES OF OCCURRENCE MORNING	AMOUNT INCHES	DATES OF NO RAIN	DAYS OF NO RAIN	CHARACTER OF WEATHER
	August 1st	11:50 A.M. to Noon	TRACE	---	---	PARTLY CLOUDY
	August 2nd	NONE	ZERO	2nd	1	LIGHT FOG
	August 3rd	NONE	ZERO	3rd	1	PARTLY CLOUDY
	August 4th	Midnight to 6 A.M. 6:40 A.M. to 8:07 A.M.	0.32 TRACE	--- ---	--- ---	CLOUDY
	August 5th	NONE	ZERO	5th	1	PARTLY CLOUDY
	August 6th	3:00A.M. to 4:30A.M. 5:00A.M. to 6:55A.M.	0.09 TRACE	--- ---	--- ---	LIGHT FOG
	August 7th	NONE	ZERO	7th	1	LIGHT HAZE
	August 8th	NONE	ZERO	8th	1	CLEAR
	August 9th	5:01A.M. to 5:20A.M. 11:50A.M. to Noon	0.01 TRACE	--- ---	--- ---	CLOUDY
	August 10th	NONE	ZERO	10th	1	PARTLY CLOUDY
	August 11th	NONE	ZERO	11th	1	LIGHT FOG
	August 12th	NONE	ZERO	12th	1	LIGHT FOG
	August 13th	11:29A.M. to Noon	0.09	---	---	CLOUDY AND THUNDERSTORM
	August 14th	NONE	ZERO	14th	1	CLEAR
	August 15th	NONE	ZERO	15th	1	CLEAR
	August 16th	NONE	ZERO	16th	1	CLEAR
	August 17th	2:30A.M. to 4:15A.M.	0.14	----	---	CLOUDY
	August 18th	2:00A.M. to 2:20A.M.	TRACE	---	---	CLOUDY
	August 19th	NONE	ZERO	19th	1	CLEAR
	August 20th	NONE	ZERO	20th	1	CLOUDY
	August 21st	NONE	ZERO	21st	1	CLOUDY
	August 22nd	12:05A.M. to 1:05A.M.	TRACE	---	---	PARTLY CLOUDY
	August 23rd	NONE	ZERO	23rd	1	PARTLY CLOUDY
	August 24th	12:05 A.M. to 10:35A.M.	0.68	---	---	CLEAR
	August 25th	NONE	ZERO	25th	1	CLEAR
	August 26th	NONE	ZERO	26th	1	CLEAR.
	August 27th	9:10A.M. to 11:45A.M.	TRACE	---	---	CLOUDY
	August 28th	NONE	ZERO	28th	1	CLOUDY
	August 29th	NONE	ZERO	29th	1	CLEAR
	August 30th	9:19 A.M. to 9:42 A.M.	TRACE	---	----	CLOUDY
	August 31st	NONE	ZERO	31st	1	CLEAR
TOTALS	11-Rain Dates 20-Day Intervals	14 Occurrences 31 Hours and 35 Minutes	1.34 8-Traces	20-Day Intervals	20	6-Partly Cloudy. 10-Cloudy 10-Clear 4-Light Fog. 1-Light Haze.
AVERAGES	11-Rain Periods 2^h-52'-17"	2^h-15'-22"	0.125	11-Rain Periods	2^h-52'-17"	Partly Cloudy

The Above Tabulation Shows the Actual Rainfall and Weather Features for the Forenoon of August, 1907, the Month Being Strikingly Deficient in Precipitation Over a Period of Twenty Years, 1905 to 1924 Inclusive. Monthly Departure from the Normal, Minus 2.05 Inches. Deficiency Since January 1st, 1907, 6.00 Inches.

VIOLENT local storms developing in the southeast quadrant, and line-squalls and thunderstorms in the eastern front, are natural features of the LOWS passing eastward over the United States. In crossing the country from west to east the LOWS may be augmented and precipitation increased by the feeding of southerly winds from the Gulf of Mexico, and of easterly winds from the Gulf Stream off the Atlantic coast, and from the region of the Great Lakes. In this connection, attention is invited to Plates XII and XIII, accompanying this article. The titles and footnotes explain the nature of the Plates, and what they aim to illustrate by the date exhibited thereon. It will be noted that the sources of cyclonic development are confined to the oceans in the Northern Hemishpere, the most favorable locations being in the vicinity of the Cape Verde Islands, the Lesser Antilles, the Revilla Gigedo Islands, northwest of Panama, and thence westward to the Samoan Islands, the China Sea and the Bay of Bengal. These regions are favorable to the formation of the Doldrums, where the trade-winds of the northern and southern oceans meet in opposition and develop the equatorial belt of calms, that give rise to frequent rains and tropical hurricanes. The Doldrums are regions of calm and of baffling winds, especially favorable to atmospheric instability and convectional circulation, encouraging cyclonic LOWS of the hurricane type. Here are found differences, contrasts and oppositions, that give rise to cyclonic circulation. Here is the birthplace and the breeding-grounds of cyclonic storms, from which LOWS enter the United States, and supply the rainfall and the local storms attending their passage over that territory. These LOWS are of deep barometric gradients, strong development and may maintain their identity for thousands of miles, if not entirely about the Globe. Plate XIII shows the wind systems of the North and South Atlantic Oceans, and of the western section of the Pacific, favorable to the formation of cyclonic LOWS and of the equatorial Doldrums. The Icelandic LOW is an important area of cyclonic circulation, that tends to hasten the passage eastward of the cyclonic LOWS of the North Atlantic. The Plate also shows the position and extent of stationary or permanent anticyclonic HIGHS, that affect the movement of cyclonic LOWS and influence the distribution of fair weather. No centers of LOW are shown in the Southern Hemisphere, where differences, contrasts and opposition, in the three fundamental elements of the Globe are more or less absent. The land areas

of the Southern Hemisphere are small, greatly scattered in achipelagos, with the dominating influence of extended water areas. The widely-separated land areas of the Southern Hemisphere are subject to great variations in rainfall supply, and for the reasons already stated. Exceptions to this rule are found in the countries of South America, and in the continent of Australia. In both land areas extensive deserts are located.

See Additional Charts on Subsequent Pages

Workmen's Compensation

FOLLOWING are two interesting cases, both involving the question of whether death had been caused by an accident.

In the first case the deceased, a workman, while digging a ditch 8 or 10 feet deep became ill, left the ditch and lost consciousness shortly thereafter. He died in a hospital eight days later. His death was admittedly due to a stroke of apoplexy. Held, that the deceased had not suffered such an accident as was contemplated by the Virginia Workmen's Compensation Law, Section 2(d), which provided that "injury, 'personal injury,' shall mean only injury by accident arising out of and in the course of employment and shall not include a disease in any form except that it results actually and unavoidably from the accident."

In the second case, the deceased was playing golf and had made a strong, awkward stroke hitting the ball, but went ahead over 150 feet when seized with violent pains over his heart. He was assisted to the clubhouse veranda and died about ten minutes after arriving there. It was held that the death did not come within the terms of an insurance policy insuring loss of life by injury effected by accidental means. The court felt that this case fell within the line of cases which hold that where one voluntarily undergoes physical exertion and nothing unforeseen, unexpected, or unintended happens, the fact that such exertion unintentionally and unexpectedly causes injury does not make the means whereby such injury is caused, namely, the voluntary exertion, accidental. Carswell v. Railway Mail Ass'n, 8 (2nd) Fed. 612; Hastings v. Travel-

	DATE OF MONTH	TIMES OF OCCURRENCE AFTERNOON	AMOUNT INCHES	DATES OF NO RAIN	DAYS OF NO RAIN	CHARACTER OF WEATHER
	August 1st	1:59 P.M. to 2:48 P.M.	0.01	---	---	PARTLY CLOUDY. MAX. TEMP., 82°
	August 2nd	10:40 P.M. to Midnight	TRACE	---	---	PARTLY CLOUDY. MAX. TEMP., 83°
	August 3rd	10:48P.M. to 11:05P.M.	0.02	---	---	PARTLY CLOUDY. MAX. TEMP., 81°
	August 4th	NONE	ZERO	4th	1	PARTLY CLOUDY. MAX. TEMP., 78°
	August 5th	10:27P.M. to 11:45P.M.	TRACE	---	---	CLOUDY. MAXIMUM TEMPERATURE, 78°
	August 6th	NONE	ZERO	6th	1	PARTLY CLOUDY. MAX. TEMP., 82°
	August 7th	NONE	ZERO	7th	1	CLEAR. MAXIMUM TEMPERATURE, 84°
	August 8th	NONE	ZERO	8th	1	PARTLY CLOUDY. MAX. TEMP. 91°
	August 9th	12:05 P.M. to 2:03P.M. 5:56 P.M. to 7:00P.M. 7:10 P.M. to 8:35P.M. 9:06 P.M. to 10:25P.M.	0.02 0.02 TRACE TRACE	--- --- --- ---	--- --- --- ---	CLOUDY. MAXIMUM TEMPERATURE, 75°
	August 10th	NONE	ZERO	10th	1	PARTLY CLOUDY. MAX. TEMP., 81°
	August 11th	NONE	ZERO	11th	1	PARTLY CLOUDY. MAX. TEMP., 79°
	August 12th	NONE	ZERO	12th	1	CLEAR. MAXIMUM TEMPERATURE, 86°
	August 13th	12:05P.M. to 1:05P.M.	0.04	---	---	PARTLY CLOUDY. MAX. TEMP., 81°
	August 14th	NONE	ZERO	14th	1	CLEAR. MAXIMUM TEMPERATURE, 77°
	August 15th	NONE	ZERO	15th	1	CLEAR. MAXIMUM TEMPERATURE, 78°
	August 16th	NONE	ZERO	16th	1	CLOUDY. MAXIMUM TEMPERATURE, 77°
	August 17th	NONE	ZERO	17th	1	PARTLY CLOUDY. MAX. TEMP., 79°
	August 18th	NONE	ZERO	18th	1	PARTLY CLOUDY. MAX. TEMP., 86°
	August 19th	NONE	ZERO	19th	1	CLEAR. MAXIMUM TEMPERATURE, 77°
	August 20th	NONE	ZERO	20th	1	PARTLY CLOUDY. MAX. TEMP., 81
	August 21st	6:15P.M. to 6:20P.M. 11:28P.M. to Midnight	TRACE TRACE	--- ---	--- ---	PARTLY CLOUDY. MAX. TEMP., 84°
	August 22nd	NONE	ZERO	22nd	1	CLEAR. MAXIMUM TEMPERATURE, 79°
	August 23rd	8:42P.M. to Midnight	0.02	---	---	CLOUDY. MAXIMUM TEMPERATURE, 75°
	August 24th	8:59P.M. to 11:08P.M. 10:00P.M. to 10:30P.M.	0.97 0.66	--- ---	--- ---	THUNDERSTORM CLOUDY. MAXIMUM TEMPERATURE, 71°
	August 25th	NONE	ZERO	25th	1	CLEAR. MAXIMUM TEMPERATURE, 77°
	August 26th	NONE	ZERO	26th	1	CLEAR. MAXIMUM TEMPERATURE, 74°
	August 27th	1:45P.M. to 2:20P.M. 6:55P.M. to 7:20P.M. 8:04P.M. to 10:05P.M.	TRACE TRACE 0.04	--- --- ---	--- --- ---	CLOUDY. MAXIMUM TEMPERATURE, 71°
	August 28th	NONE	ZERO	28th	1	CLEAR. MAXIMUM TEMPERATURE, 76°
	August 29th	NONE	ZERO	29th	1	CLEAR. MAXIMUM TEMPERATURE, 75°
	August 30th	NONE	ZERO	30th	1	PARTLY CLOUDY. MAX. TEMP., 74°
	August 31st	NONE	ZERO	31st	1	CLEAR. MAXIMUM TEMPERATURE, 74°
TOTALS	10-RAIN DATES 21-Day Interval	16 Occurrences 19 Hours and 33 Minutes	1.14 8-Traces	21-Day Intervals.	21	14-Partly Cloudy. 6-Cloudy 11-Clear. Mean Max. Temp., 79.0°
AVERAGES	10-Rain Periods 1h-57'	1h-31'-36"	0.1425	10-Rain Periods	1h-57'	Partly Cloudy

PLATE No. XVI.—The P. M. Rainfall and Weather of 1907 for August at New York City, N. Y.

The Above Tabulation Shows the Actual Rainfall, Weather Features, and Variability of Maximum Temperatures for the Afternoon of August, 1907, the Month Being Notably Deficient in Precipitation Over a Period of Twenty Years, 1905 to 1924 Inclusive. No Rainfall of a Tenth of An Inch or More During the Crucial-7-Hour Hazard Period of 2 P. M. to 9 P. M. Deficiency in Temperature Since January 1st, 1907, 291 Degrees.

PLATE No. XVII.—The A. M. Rainfall and Weather of 1923 for August at New York City, N. Y.

	DAYS OF MONTH	TIMES OF OCCURRENCE MORNING	AMOUNT INCHES	DATES OF NO RAIN	DAYS OF NO RAIN	CHARACTER OF WEATHER
	August 1st	NONE	ZERO	1st	1	CLOUDY
	August 2nd	8:00 A.M. to 9:00 A.M.	TRACE	---	---	CLOUDY
	August 3rd	NONE	ZERO	3rd	1	PARTLY CLOUDY
	August 4th	NONE	ZERO	4th	1	PARTLY CLOUDY
	August 5th	NONE	ZERO	5th	1	PARTLY CLOUDY
	August 6th	NONE	ZERO	6th	1	CLEAR
	August 7th	NONE	ZERO	7th	1	CLOUDY
	August 8th	NONE	ZERO	8th	1	PARTLY CLOUDY
	August 9th	NONE	ZERO	9th	1	CLEAR
	August 10th	NONE	ZERO	10th	1	CLEAR
	August 11th	NONE	ZERO	11th	1	CLEAR
	August 12th	4:00 A.M. to 4:30 A.M.	TRACE	---	---	CLOUDY
	August 13th	NONE	ZERO	13th	1	PARTLY CLOUDY
	August 14th	NONE	ZERO	14th	1	CLEAR
	August 15th	5:50 A.M. to 5:50 A.M.	0.06	---	---	CLOUDY AND THUNDERSTORM
	August 16th	NONE	ZERO	16th	1	PARTLY CLOUDY
	August 17th	NONE	ZERO	17th	1	PARTLY CLOUDY
	August 18th	NONE	ZERO	18th	1	CLEAR
	August 19th	NONE	ZERO	19th	1	PARTLY CLOUDY
	August 20th	NONE	ZERO	20th	1	CLEAR
	August 21st	NONE	ZERO	21st	1	PARTLY CLOUDY
	August 22nd	1:00 A.M. to 2:50 A.M. 3:00 A.M. to 7:40 A.M.	TRACE 0.24	---	---	CLOUDY
	August 23rd	NONE	ZERO	23rd	1	CLEAR
	August 24th	NONE	ZERO	24th	1	CLEAR
	August 25th	NONE	ZERO	25th	1	CLEAR
	August 26th	NONE	ZERO	26th	1	CLEAR
	August 27th	NONE	ZERO	27th	1	CLEAR
	August 28th	Midnight to 1:30 A.M.	0.04	---	---	PARTLY CLOUDY
	August 29th	Midnight to 2:30 A.M. 7:25A.M. to 8:00A.M. 8:30A.M. to 10:00A.M. 10:10A.M. to 11:40A.M.	0.18 TRACE 0.01 TRACE	--- --- --- ---	--- --- --- ---	CLOUDY
	August 30th	NONE	ZERO	30th	1	CLEAR
	August 31st	NONE	ZERO	31st	1	CLEAR
TOTALS	6-Rain Dates 25-Day Intervals	10 Occurrences 17 Hours and 55 minutes	0.51 5-Traces	25-Day Intervals	25	14 Clear Days 10 Partly Cloudy Days 7 Cloudy Days
AVERAGES	6-Rain Periods 3h-55'-50"	1h-45'-50"	0.102	6-Rain Periods	3h-55'-50	PARTLY CLOUDY

The Above Tabulation Shows the Actual Rainfall and Weather Features for the Forenoon of August, 1923, the Month Being Strikingly Deficient in Precipitation Over a Period of Twenty Years, 1905 to 1924 Inclusive. Monthly Departure from the Normal, Minus 3.41 Inches. Deficiency Since January 1st, 1923, 6.75 Inches.

See Chart No. XVIII on Page 29

ers' Insurance Company, 190 Fed. 258 (260).

First Case—Crews v. Moseley Brothers (42355) Supreme Court of Appeals, Virginia. Decided June 16, 1927. Not yet reported.

Second Case—Baker v. Inter-State Business Men's Accident Insurance Association (42299) U. S. District Court, Western Dist. of Penn. Decided June 16, 1927. Not yet reported.

Kindness to Worms

"So you are using balloon tires now."

"Yes; they are easier on the pedestrians."—*The American Boy Magazine.*

Dog Fight

"I can read a book and still listen to the radio music," said Miss Cayenne.

"Isn't it confusing?"

"No. Each helps to take my mind off the other."—*Washington Star.*

For Her Dear Old Mom

The sweet young thing was saying her prayers: "Dear Lord," she cooed, "I don't ask for anything for myself, only give Mother a son-in-law."—*Bison.*

Thwarting the Fire Hazard

(*Continued from page* 12)

contents after subjection to a severe fire for one hour, a clear drop of thirty feet while in the heated condition and a subsequent fire test of one hour's duration.

As an aid in applying the results of the furnace tests of materials to the actual fire conditions to be met with in buildings, considerable attention has been given the matter of obtaining information on the probable maximum intensity and duration of fires to be expected in buildings of typical construction and occupancies. Ruins of burned buildings have been examined for fire effects that might give an idea of the severity of the fire as compared with that used in the furnace tests. A small brick and concrete building has also been burned out a number of times with a few typical occupancies.

TEMPERATURES are measured at thirty or more points along the walls and roof and in the debris, and a good measure obtained of the intensity and duration of the fire under the given conditions. Discarded furniture and records were in this case arranged as in an office occupancy. The data obtained in this and similar tests will apparantly prove valuable in determing in what locations materials and constructions passing given furnace tests will give sufficient resistance under fire conditions in buildings. It is known that the intensity and duration of fires in buildings vary greatly and depend on the amount and character of materials in the construction and the building contents. For the best design and economy the fire resistance of the construction should be commensurate with severity of the fires that can occur.

Fire-resistance tests, while apparently destructive, have in view ends of the most constructive nature.

Information on the fire resistance of building materials and constructions would otherwise have to be obtained from fires and conflagrations that too often have laid waste whole cities and left in their wake much poverty and suffering. In the fire tests the effects of these destructive agents can be gauged under controlled conditions and the information obtained is much more definite than is possible to obtain from the ever-varying conditions accompanying a building fire. The annual cost of these tests approximates the value of the property destroyed on the average in the time required for reading the account of the activities herein given, as computed on the present basis of an average national property loss from fire of $1000 per minute.

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'Cos Why

TEACHER—"I have went. That's wrong, isn't it?"

JOHNNY: "Yes, ma'am."

TEACHER—"Why is it wrong?"

JOHNNY—"Because you ain't went yet."—*Youth's Companion.*

Clear Conscience

JUDGE—"What did you do when you saw the deceased? The officer says you neither slowed down nor turned out."

DEFENDANT—"I took all precautions, Your Honor. I blew my horn and cursed him."—*Columbia Jester.*

Perfect Alibi

There was a timid knock at the door. "If you please, kind lady," said the beggar, "I've lost my right leg—"

"Well, it ain't here!" retorted the woman of the house, as she slammed the door. —*Nash Journal.*

Paying for Motor Accidents

(*Continued from page* 10)

The security must be such as the court shall deem proper to satisfy within thirty days after final judgment such portion thereof as shall not be in excess of $5,000 for bodily injuries or death or $1,000 for damage to property. The court is required to accept from an authorized insurance company a certificate that it has issued a liability policy or bond available for satisfying a judgment against the defendant for the usual $5,000-$10,000 limits. Undoubtedly this would mean a policy or bond dated before the accident occurred. The provisions which must be in the certificate policy and bond are contained in the Act. Until the security ordered by the court has been furnished no car, whose registration has been suspended or which is owned by the defendant, and no person who has been prohibited from operating a car on the highway or whose license has been suspended, may be reinstated.

At the preliminary hearing, which must be "as soon as may be" after seven days following the filing of the petition, the decision of the court shall be final as to the matters before it. Service of process on a non-resident involved in an accident is assumed by the following language in the law:

> "The operation by a non-resident, or with his express or implied consent if an owner, of a motor vehicle or trailer on a public way of the state shall be deemed equivalent to an appointment by such non-resident of the motor vehicle commissioner or his successor in office, to be his true and lawful attorney upon whom may be served all lawful processes in any action against him, growing out of any accident in which said non-resident may be involved while so operating or so permitting to be operated a motor vehicle on such way."

The Act requires that the form of the liability policy shall be filed with the Insurance Commissioner and be subject to his approval. It must contain the name, address, and business of the insured, a description of the cars covered, the premium charges, policy period, limit of liability and an agreement that insurance is provided in accordance with the Act. The policy is made subject to certain provisions specified in the law which, however, do not have to be printed therein. They make the liability of the company absolute whenever loss occurs covered by the policy even if the defendant is unable to pay; include the usual statement as to what constitutes the entire contract; provide that no statement made by the insured and no violation of the terms of the policy shall defeat or avoid the policy so as to bar recovery within its limits; require that the policy if unexpired upon the death or insolvency of the insured shall during the rest of its term cover his legal representatives, and state that the policy shall contain such provisions not inconsistent with this Act as may be required by the Commissioner of Insurance.

At the trial of an action at law for damages neither the findings of the court at the preliminary hearing, nor the certificate of security filed by the defendant shall be referred to in any way and shall not be evidence of the negligence or due care of either party. The Act does not debar the plaintiff from relying upon other processes provided by law.

The outlook for the Act is that it will gradually weed out many of the impecunious drivers who neglect to insure. Sooner or later they will be in an accident the fault for which will be theirs. Then they must retire. The victim, however, gets nothing in such case. That is one great difference between the New Hampshire law and the compulsory Massachusetts law. To such operators one law says "provide the means before you drive;" the other says "you are allowed one accident before you have to show responsibility." One law tends to keep the "judgment proof" owner off the road before an accident, the other ousts him and his car after.

ANNUAL MEETING
of the
NATIONAL ASSOCIATION
OF
MUTUAL CASUALTY COMPANIES
and
NATIONAL ASSOCIATION
OF
AUTOMOTIVE MUTUAL INSURANCE COMPANIES
at
Buffalo, N. Y.
OCTOBER 10-11-12, 1927

Vermont, Chapter 81,
Approved March 25, 1927

THE Commissioner of Motor Vehicles administers the new Act which provides that said official *shall* require any person convicted of violating certain specified sections of the "Motor Vehicle Act" and from any person in whose name a motor vehicle is registered which is involved in an accident injuring or killing a person or damaging such motor vehicle or other property $100 or more, if said commissioner deems that the operator was at fault, proof of financial responsibility of at least $5,000-$10,000 for injury to persons and $1,000 for damage to property, which proof shall cover all motor vehicles owned by such person.

Failure to furnish such proof within ten days after notice mailed by said Commissioner makes it the duty of the Commissioner to suspend, until such proof is furnished, the operating license and the registration of the car of such person and to refuse thereafter to register any motor vehicle owned or controlled by him.

If such a person is a non-resident his right to operate or cause to be operated a motor vehicle in this state shall be suspended and the Commissioner shall refuse to register any motor vehicle transferred by the non-resident unless the Commissioner is satisfied that the transfer is a bona-fide sale.

Proof of financial responsibility as furnished under this Act must be kept on file and in force to secure renewal of license or registration of car but after three years if such person during that period has not been convicted of violating the motor vehicle laws and if no suit or judgment arising from the operation of a car and if no suspension or revocation of his license or the registration of his car has been put into effect, the Commissioner may relieve a registrant from further continuing such bond or policy.

The proof of financial responsibility required by the Act shall be satisfactory to the Commissioner and may be insurance against public liability in a non-cancellable policy except after ten days notice to said Commissioner, or a bond of a surety company. Additional evidence of financial responsibility shall be furnished to the Commissioner whenever he calls for it.

For a fee of $1 the Commissioner shall furnish upon request of an insurance or bonding company a certif-

icate of the operating record of any person subject to this Act and if the person inquired about has no record of a conviction on account of operating a car or of causing injury or damage or of suspension of revocation of license, the Commissioner shall so certify.

A penalty not exceeding $25 is provided for the person who fails to return his certificate of registration and number plates when his registration has been suspended.

Rhode Island, Chapter 1040
Effective June 21, 1927

THE administration of this Act is by the State Board of Public Roads. It applies to accidents on highways by motor vehicles involving bodily injuries, or property damage of $100 or over. On the happening of such an accident the Board *may* investigate to ascertain if the owner or operator has violated Section 16, Chapter 98, General Laws. If such violation appears the owner may elect to furnish a certificate of (1) liability insurance for injury to persons for not less than the named $5,000-$10,000 limits and for damage to property in not less than $1,000; or (2) a surety bond for at least $10,000 "to indemnify any person who may be injured or whose property may be damaged as a result of the operation of such motor vehicle, and of any other motor vehicles belonging to such owner;" or (3) evidence of financial responsibility above fixed liabilities to answer to a judgment of $20,000.

It is deemed in compliance with above provisions if such certificates or evidence of security are furnished to the Board at any time after the passage of this Act. But as a policy dated subsequent to an accident could hardly apply for indemnity on account of that accident, apparently the security that would be in compliance would not include such policy.

If the operator is a non-resident the Board *may* suspend his right to operate in Rhode Island for not exceeding one year and *shall* give notice of such suspension to the authorities of the state issuing such person's operator's license.

If the owner is a non-resident the Board *shall* suspend the right of such owner to operate or cause to be operated in Rhode Island any motor vehicle owned by him and *shall* give notice of its action to the authorities of the state which issued the registration of the car involved in the accident. The Board shall not renew such right until the owner has complied with the provisions of this act "to the extent that may be deemed advisable by said Board."

Persons aggrieved by any decision of the Board may appeal to the courts. The procedure for such appeal is set forth in the act.

Penalties are provided for false certificates.

The person operating the motor vehicle with the express or implied consent of the owner, lessee or bailee thereof shall be deemed to be the agent of said owner, lessee or bailee.

The Board may do such acts and require such information as it may deem necessary to establish the ownership of such motor vehicles and the authority to operate them.

FALL AND WINTER ISSUES

of the

JOURNAL

of

AMERICAN INSURANCE

will contain articles by the Foremost Insurance Educators in America

This act is the mildest of the group. It awaits an accident before requiring any evidence of financial responsibility for injury or damage for which the owner is liable and then requires certain security "for injuries to persons or damage to property which may thereafter result from the operation of such motor vehicle, and of any other motor vehicle belonging to such owner, as the Board may deem adequate." It does not require in specific terms at least the suspension of the operator's license or of the registration of his car if he is a resident even if he does not furnish the security called for, which security it should be noted is to provide means for settling for injuries which may "thereafter" result from the operation of the car.

Connecticut Act of 1925,
Chapter 183

THIS Act, the pioneer of its class, relates to financial responsibility for damage caused by the operation of motor vehicles, and to convictions for violation of the motor vehicle laws. It provides that when the operator of a motor vehicle has been convicted of reckless driving including speeding, operating while intoxicated, evasion of responsibility, causing death or injury of any person or damage of at least $100 to the property of another, the motor vehicle Commissioner may require proof of financial responsibility to satisfy claims for damage up to $10,000 for injury to person and $1,000 for property damage.

Upon conviction of the operator for any one of these offenses the registration of the car will be suspended unless the registrant convinces the Commissioner that any final judgment for loss or injury which has been or may be caused by the car will be promptly paid. The registration of any other motor vehicle owned by the same person will be refused. It should be noted that these suspensions of license and registration take place only after conviction of offender so apparently he is still on the road if the case experiences the usual delay in being heard in court. Contrast with this the New Hampshire law which provides a speedy preliminary hearing to determine whether the operator was probably at fault, and if the decision is against him suspends his license and registration unless evidence of ability to pay damages to the extent set forth in the law is forthcoming.

The proof of financial responsibility must be satisfactory to the Commissioner. It may be evidence of the existence of a liability policy for $10,000 for injury to person and $1,000 for property damage; a surety bond by a corporation or individual for like sums; or a deposit of money or collateral satisfactory to the Commissioner, interest at not more than 5 per cent to be paid on the money deposit if the Commissioner so directs. Both the policy and the bond must be in terms satisfactory to the Commissioner and not over $10 may be charged as a fee for investigating the value and title of real estate of the individual bondsman.

Upon request of any party furnishing financial backing to a car owner as in the Act provided the Commissioner shall furnish a certified abstract of the operating record of said person. If there be no record of his conviction for operation of a car in violation of law or of any injury or damage as set forth in the law the commissioner shall so certify.

	DAYS OF MONTH	TIMES OF OCCURRENCE AFTERNOON	AMOUNT INCHES	DATES OF NO RAIN	DAYS OF NO RAIN	CHARACTER OF WEATHER
	August 1st	NONE	ZERO	1st	1	CLOUDY. MAXIMUM TEMPERATURE.67°
	August 2nd	NONE	ZERO	2nd	1	CLEAR. MAXIMUM TEMPERATURE.79°
	August 3rd	NONE	ZERO	3rd	1	CLOUDY. MAXIMUM TEMPERATURE.87°
	August 4th	4:05P.M. to 4:10P.M.	TRACE	---	---	CLOUDY. MAXIMUM TEMPERATURE.88°
	August 5th	12:45P.M. to 12:50P.M. 2:20P.M. to 2:40P.M.	TRACE TRACE	--- ---	--- ---	CLOUDY. MAXIMUM TEMPERATURE.89°
	August 6th	NONE	ZERO	6th	1	CLEAR. MAXIMUM TEMPERATURE. 84°
	August 7th	5:45P.M. to 6:00P.M. 6:05P.M. to 6:10P.M.	0.02 TRACE	--- ---	--- ---	CLOUDY. MAXIMUM TEMPERATURE.84°
	August 8th	NONE	ZERO	8th	1	PARTLY CLOUDY. MAX.TEMP..84°
	August 9th	NONE	ZERO	9th	1	CLEAR. MAXIMUM TEMPERATURE.77°
	August 10th	NONE	ZERO	10th	1	PARTLY CLOUDY. MAX.TEMP..83°
	August 11th	NONE	ZERO	11th	1	PARTLY CLOUDY. MAX.TEMP..83°
	August 12th	(12:21P.M. to 12:27P.M. (2:00P.M. to 3:00P.M. (3:40P.M. to 4:00P.M. (8:35P.M. to 10:20P.M.	TRACE TRACE 0.06 0.09	--- --- --- ---	--- --- --- ---	CLOUDY. MAXIMUM TEMPERATURE.81°
	August 13th	NONE	ZERO	13th	1	PARTLY CLOUDY. MAX.TEMP..78°
	August 14th	NONE	ZERO	14th	1	CLEAR. MAXIMUM TEMPERATURE.77°
	August 15th	NONE	ZERO	15th	1	PARTLY CLOUDY. MAX.TEMP..84°
	August 16th	NONE	ZERO	16th	1	PARTLY CLOUDY. MAX.TEMP..71°
	August 17th	NONE	ZERO	17th	1	PARTLY CLOUDY. MAX.TEMP..72°
	August 18th	NONE	ZERO	18th	1	CLEAR. MAXIMUM TEMPERATURE.75°
	August 19th	5:38P.M. to 6:10P.M.	TRACE	---	---	CLOUDY. THUNDERSTORM MAXIMUM TEMPERATURE.80°
	August 20th	NONE	ZERO	20th	1	PARTLY CLOUDY. MAX.TEMP..77°
	August 21st	NONE	ZERO	21st	1	PARTLY CLOUDY. MAX.TEMP..79°
	August 22nd	NONE	ZERO	22nd	1	CLEAR. MAXIMUM TEMPERATURE.78°
	August 23rd	NONE	ZERO	23rd	1	CLEAR. MAXIMUM TEMPERATURE.71°
	August 24th	NONE	ZERO	24th	1	CLEAR. MAXIMUM TEMPERATURE.72°
	August 25th	NONE	ZERO	25th	1	CLEAR. MAXIMUM TEMPERATURE.78°
	August 26th	NONE	ZERO	26th	1	CLEAR. MAXIMUM TEMPERATURE.75°
	August 27th	9:30P.M. to MIDNIGHT	0.40	---	---	CLOUDY. MAXIMUM TEMPERATURE,73°
	August 28th	5:30P.M. to 7:30P.M. 10:25P.M. to Midnight	TRACE 0.04	--- ---	--- ---	CLOUDY AND THUNDERSTORM MAXIMUM TEMPERATURE. 76°
	August 29th	NONE	ZERO	29th	1	CLOUDY. MAXIMUM TEMPERATURE.76°
	August 30th	NONE	ZERO	30th	1	CLEAR. MAXIMUM TEMPERATURE.80°
	August 31st	NONE	ZERO	31st	1	CLEAR. MAXIMUM TEMPERATURE.80°
TOTALS	7-Rain Dates 24-Day Intervals	13 Occurrences 11 Hours and 12 Minutes	0.61 8-Traces	24-Day Intervals	24	10-Cloudy, 9-Partly Cloudy 12-Clear Mean Maximum Temperature.78.7°
AVERAGES	7-Rain Periods 1^{D}-36'	0^{h}-51'-46"	0.122	7-Rain Periods.	0^{h}-51-46"	Partly Cloudy

PLATE No. XVIII. The P. M. Rainfall and Weather of 1923 for August at New York City, N. Y.

The Above Tabulation Shows the Actual Rainfall, Weather Features and Variability of Maximum Temperatures for the Afternoon of August, 1923, the Month Being Notably Deficient in Precipitation Over a Period of Twenty Years, 1905 to 1924 Inclusive. No Rainfall of a Tenth of An Inch or More During the Crucial-7-Hour Hazard Period of 2 P. M. to 9 P. M. Deficiency in Temperature Since January 1st, 1923, 183 Degrees.

Washington

(*Continued from page* 18)

ginia mansion was once the property of a foster son of President Washington, and was eventually inherited by the wife of Gen. Robert E. Lee.

It was from this place, on April 22, 1861, that General Lee went forth to battle for the lost cause. In 1862 the Government took possession of the property on account of non-payment of taxes, and at the suggestion of President Lincoln it was converted into a National Cemetery, being finally purchased by the Government for $150,000.

The cemetery now contains the bodies of nearly thirty thousand known and about five thousand unknown dead, embracing many of the remains of those who perished on the "Maine," as well as thousands of the heroes who died on the battlefields of the World War.

East of the Maine Memorial and on a bluff overlooking the Potomac, directly opposite the new Lincoln Memorial, is located the new marble memorial ampitheatre, erected by Congress at a cost of nearly a million dollars, as an enduring memorial of the nation's heroic dead.

This beautiful architectural memorial is the culmination of efforts of the Grand Army of the Republic, at whose instigation it was erected.

The building has a seating capacity of 5,000 in the ampitheatre and thousands more may be accommodated in the colonnades. It is one of the most impressive and beautiful structures in the country. It will be used as an assembly for patriotic exercises on Memorial Day and other solemn occasions. Directly in front of the ampitheatre is the tomb of the Unknown Soldier.

The New National Museum, located on the Mall, at Tenth and B Streets, S. W., with millions of specimens, curios, mounted animals and birds, is one of the most interesting buildings for visitors in Washington. It contains the National Art Gallery, a fine collection of American and foreign art examples and practically all of the Natural History Collections, including the ethnological, geological, and biological exhibits. A portion of the collection is contained in the old building near the Smithsonian Institution.

Golfer's Attention

Devotees of the links should make it a point to fill in the Entry Blank found on page 32 of this issue and thus help to make sure that all the best foes of Col. Bogey will be in action at the Tournament on Monday, September 19th.

Paying for Motor Accidents

(Continued from page 28)

Tabulation of Important Provisions of Non-Compulsory Motor Laws of the New England States

	MAINE	NEW HAMPSHIRE	VERMONT	RHODE ISLAND	CONNECTICUT
Act Effective *Act Administered by* *Act Requires Security Against*	*Chapter 210, 1927* *January 1, 1928* *Secretary of State* *Injury to Persons* *Damage to Property*	*Chapter 54, 1927* *June 1, 1927* *Court and Commissioner of Motor Vehicles* *Injury to Persons* *Damage to Property*	*Chapter 81, 1927* *Approved March 25, 1927* *Commissioner of Motor Vehicles* *Injury to Persons, Damage of $100 or over to Property*	*Chapter 1040, 1927* *June 21, 1927* *Board of Public Roads* *Injury to Persons, Damage of $100 or over to Property*	*Chapter 183, 1925* *January 1, 1926* *Motor Vehicle Commissioner* *Injury to Persons, Damage of at least $100 to Property*
Security Must Be Furnished	*After conviction (1) of violation of law respecting operation of motor vehicle while operator is under the influence of intoxicants or drugs, or (2) violation by operating recklessly endangering lives or safety on any highway.*	*After accident if upon preliminary inquiry court finds such accident was probably due in whole or in part to negligence of defendant and not due in whole or in part to the negligence of the plaintiff.*	*Upon conviction of violation of Sec. 86, 87, 88 or 91 "Motor Vehicle Act," and after any accident resulting in personal injury, or property damage of not les than $100, if operator was at fault as determined by the Commissioner.*	*When it appears to Board after accident that any of the provisions of Sec. 16, Chapter 98 of General Laws or any amendment thereof have been violated.*	*After conviction of any one of certain offenses against the law resulting from operation of car or causing an accident by operating car on highway by which a person was injured or property damaged due to operator's negligence.*
Amount Required	*Proof of financial responsibility for death or injury of person of not less than $5,000 and for damage to property of not less than $1,000.*	*Such security as the court shall deem proper. A $5,000/$10,000 liability policy or $5,000 surety bond in force answers for personal injuries and $1,000 for personal damage.*	*Injury to persons $5,000/$10,000.* *Damage to Property, $1,000.*	*Injury to Persons $5,000/$10,000 or Damage to Property $1,000 in form of policy of insurance or surety bond or proof of financial resources of at least $20,000.*	*Injury to Persons $10,000.* *Damage to Property $1,000.*
Form of Security	*Must be satisfactory to Secretary Liability Policy or Bond or deposit of cash or securities may be accepted for said amounts. Bond of an individual complying with the terms accepted. Additional evidence of security must be furnished when called for by the Secretary.*	*Liability Policy or Bond or deposit of cash or securities.*	*Proof of financial responsibility satisfactory to Commissioner, Liability policy or bond if required amounts acceptable if in admitted companies. Additional evidence of security must be furnished when called for by the Commissioner.*	*Liability Policy or Bond or other proof of resources of required amount.*	*Proof of financial responsibility as is satisfactory to Commissioner, Liability policy or bond, corporate or personal, for required amounts, or deposit may be accepted. Additional evidence of security must be furnished when called for by the Cohmmissioner*
Result of Failure to Furnish Required Security	*Until proof is furnished the Secretary may suspend registration of all cars of defendant if a resident and if a non-resident may withdraw privilege of operating a car in the state and refuse to register any car transferred by him until such sale is proved bonafide.*	*Suspension of license and registration of all cars of defendant. If operator was owner operator's license and registration of all cars in his name are suspended. Non-resident prohibited from operating any car in the state.*	*After 10 days' notice suspension of license and registration of all cars of the defendant and refusal of future licenses until such proof is furnished. Non-resident prohibited from operating car in the state and a car transferred by him shall not be registered without proof that the sale was bonafide.*	*No specified penalty for a resident. Suspension of right of a non-resident to operate a car in the state for one year and, if owner, suspension of right to cause any car to be operated in the state until he has complied with the law to the extent required by the Board. Notice of these suspensions must be given to the licensing authorities of the States which issued the licenses to the non-resident.*	*Until proof is furnished a suspension of registration of car, refusal to register any car owned by defendant thereafter. Withdrawal from defendant if non-resident privilege of operating car in this state and refusal to register any car transferred by him without proof that the transfer was a bonafide sale.*
When Registration is Suspended	*Immediate return of number plates and registration certificate to Secretary. Failure thereof makes offender liable to fine of $25 plus expense of securing number plates and certificate.*	*No provision respecting return of number plates or registration certificate.*	*Immediate return of number plates and certificate of registration to Commissioner. Failure thereof subjects offender to penalty of not more than $25.*	*No provision respecting return of number plates or certificate of registration.*	*Number plates and certificate of registration of car must be returned to Commissioner. Failure thereof subjects the offender to a penalty of not over $25 and costs of securing number plates and certificate.*
When Evidence of Financial Responsibility is Surrendered	*After 3 years following deposit and continuance in force of policy or bond they may be surrendered to person furnishing same if he has, during the period, violated no provision of the motor law and if no right of action or judgment on account of the operation of a car is outstanding against him.*	*No provision in Motor Vehicle law, Chapter 54.*	*Registrant relieved of continuing policy or bond after 3 years if meanwhile he has not been convicted of violation of motor laws, has suffered no suspension of his license as operator and has then no suit or judgment on account of operating a car outstanding against him.*	*No provision in this Act, Chapter 1040, 1927.*	*After 3 years following deposit and continuance in force of policy or bond they may be surrendered to person furnishing same if during the period he has violated no provision of the motor law and if no right of action or judgment on account of the operation of a car is outstanding against him.*
Operating Record of Person Subject to the Act	*On request of any party furnishing evidence of resources to pay a claim arising from operation of a car the Secretary shall furnish certified abstract of the operating record of the person involved. If there be no record of conviction for operating car in violation of law or of any injury or damage by such person the Secretary shall so certify. Fee for certificate $1.*	*No Provision.*	*On request of any party furnishing evidence of resources to pay a claim arising from operation of a car the Comm'r shall furnish certified abstract of the operating record of the person involved. If there be no record of conviction for operating car in violation of law or of any injury or damage by such person the Com'r shall so certify. Fee for certificate $1.*	*No provision.*	*On request of any party furnishing evidence of resources to pay a claim arising from operation of a car the Com'r shall furnish certified abstract of the operating record of the person involved. If there be no record of conviction for operating car in violation of law or of any injury or damage by such person the Comm'r shall so certify. Fee for certificate $1.*
Form	*Terms shall be such as Secretary shall deem adequate. Not exceeding $10 may be charged as a fee for investigating surety's real estate or collateral. Policy must be non-cancellable except on ten days' notice.*	*Policy or bond, the meaning of both of which are given in the law, are subject to certain provisions specified in law and to approval of Com'r of Ins. Policy must contain name, address and business of insured, description of cars covered, charge for premium, policy period, limits of liability and agreement that policy covers as provided in the Act. The Act does not give Com'r authority to make rates. Binder is also provided for and indorsement of existing policy.*	*Not specified but must be non-cancellable except after ten days' notice and be issued by authorized company.*	*Not specified but must be non-cancellable except after five days' notice and be issued by an authorized company.*	*Terms shall be such as Com'r shall deem adequate. Policy non-cancellable except after 10 days' notice to Com'r. Not exceeding $10 may be charged as a fee for investigating surety's real estate or collateral.*

(Continued from preceding page)

	MAINE	NEW HAMPSHIRE	VERMONT	RHODE ISLAND	CONNECTICUT
Interest on Money Deposit	State shall pay interest thereon at not exceeding 5 per cent when so directed by the Secretary.	The defendant is entitled to interest accruing on his deposit.	No provision.	No provision.	State shall pay interest at not exceeding 5 per cent when so directed by the Board.
Rules and Regulations	The Secretary shall make rules and regulations necessary for the administration of the Act.	Insurance Commissioner may require such policy provisions not inconsistent with this Act as he deems proper.	No provision.	Board may examine cars, operators' licenses, verify engine numbers and manufacturer's numbers and do such acts and demand such information as it may require to establish ownership and authority to operate. Police may be called upon to assist.	Motor Vehicle Commissioner shall make rules and regulations necessary for the administration of the Act.

Nebraska Rulings

RULING No. 9, Agents' Balances and Credits, dated July 1st, 1926 has been amended to read as follows:

"This Department will expect all insurance companies, except life, licensed in the State of Nebraska, to hereafter insist that all agents make remittances to the company, state agent, general agent or branch office, within 45 days from the end of the month in which the policy is written on Nebraska business, and that all state agents, general agents and branch offices make remittances to the home office of the company as promptly thereafter as possible and practicable.

"It is hereby made an order and a ruling by this Department that no agent, solicitor, broker or company shall directly or indirectly allow credit to any policyholder for the payment of premium on any policy covering any risk located or residing in this state, beyond a period of 45 days from the end of the month in which the policy is written or audit is made, without charging interest on such account of not less than 6 per cent per annum, nor more than the legal rate per annum after said 45 days. This ruling to apply to all notes or other evidence of indebtedness which may be taken in payment of such premiums, except such notes as are taken under the general rules and practices governing farm and hail business.

"This Department will expect companies licensed in this state to hereafter hold the agent liable for all earned premiums on 'not taken' policies covering Nebraska risks not cancelled and returned to the company within 45 days from the end of the month in which the policy was written.

"This order and ruling is promulgated under authority and in compliance with Sections 7745, 7793, 7797 and 7884 Compiled Statutes of Nebraska for the year 1922."

Book About Insurance Commissioners Is a Much Discussed Volume

A BOOK which has been eagerly awaited by the insurance world, is "The Insurance Commissioner in the United States," by Professor Edwin W. Patterson of the College of Law of Columbia University. This work follows the development of State regulation through its history and is a highly interesting and thought stimulating volume.

The author has not hesitated to tell what he thinks about various matters pertaining to his subject, and whether one agrees with him or not he leaves many valuable sugestions to ponder over at the end of his dissertation.

"The Insurance Commissioner in the United States" may be regarded as an important survey of a very live topic and it is certain to be much discussed everywhere that Insurance is made a matter of serious study.

There is a foreword by Felix Frankfurter, Byrne, Professor of Administration Law in Harvard University and the chapter headings include:

Organization and Personnel
Scope of Control by Administrative
Inquisitorial and Visitorial Powers
Administrative Methods and Machinery
Control of Administrative Action
Appendix A—History of Administrative Control of the Insurance Business
Appendix B—The Scope and the Data of the Present Study
Appendix C—Key to Statutory Citations and Other Abbreviations
Appendix D—Table of Cases
Appendix E—Texts and Reference Works Cited

BITS OF WIT

No Spectator

They were newly wedded and not in the best of circumstances. Said he, "If things don't go better with us, darling, I suppose your father won't see us starve."

"No, poor dear," replied the young wife, "his eyesight gets worse every day."—*Boston Transcript.*

The Flatter Flats

"Well," remarked a married man after examining his friend's new flat, "I wish I could afford a place like this."

"Yes," said his friend, "you married men may have better halves, but we bachelors usually have better quarters."—*Pathfinder.*

Annual Wash

"Where do you bathe?"

"In the spring."

"I didn't ask you when, I asked you where."—*Voo Doo.*

Say It with Thrift

"Pa, you remember you promised to give me $5 if I passed in school this year?"

"Yes, Tommy."

"Well, Pa, you ain't gonna have that expense."—*Christian Leader.*

Stepping On It

"How are you getting on at school, Alec?"

"Fine! We're learning words of four cylinders now."—*American Boy.*

Dun't Esk

"Are you guilty or not guilty?"

"I don't quite see," said the prisoner sadly, "why I should express an opinion and try to interfere with the jury's guessing contest."—*Washington Star.*

Bossy's Epitaph

A farmer was trying hard to fill out a railway company claim sheet for a cow that had been killed on the track. He came down to the last item: "Disposition of carcass." After puzzling over the question for some time, he wrote: "Kind and gentle."—*Tawney Kat.*

Wig-Wagging

Most of the family were at the parlor window watching the king and queen ride by. Suddenly the mother turned to her daughter. "Where's your auntie?"

"Up-stairs," came the reply, "waving her hair."

"Mercy." exclaimed the mother, "can't we afford a flag?"—*Boston Transcript.*

Conning Herself

A young girl came to the late Father Healey, of Dublin, and confessed that she feared she had incurred the sin of vanity. "What makes you think that?" asked her father confessor.

"Because every morning when I look into the mirror I think how beautiful I am."

"Never fear, my girl," was the reassuring reply. "That isn't a sin; it's only a mistake."—*The Churchman.*

Associated Mutuals

Grain Dealers Mutual Fire Insurance Company
Automobile Mutual Fire Insurance Company
Automobile Mutual Liability Insurance Company
Beacon Mutual Fire Insurance Company

An organization of Massachusetts Mutual Insurance Companies associated under one management and devoted to reducing insurance costs. Dividends 20% to 25%.

Associated Mutuals

211 Congress Street
Boston, Mass.
A. Shirley Ladd, Secretary

Getting Back on the Job

(*Continued from page 16*)

The season that lies ahead of us looks full of promise from our point of vantage. We are sure it is replete with opportunities for progress and profit. There is much in the way we approach them; there is much in the way in which we conserve our renewed vitality for the difficulties and obstacles inevitably to be met on the long journey before we turn aside again for a breathing space.

Go to it, then, with new confidence and determination. Make the old desk a place on which to chalk up a better record than ever before.

Golf Tournament Entry Blank

WASHINGTON, D. C., SEPT. 19 TO 22

Name.....
Company Address.....
Name of Golf Club.....
Length of Course.....Par.....
Three Lowest Scores on Above Course in 1927.....
Club Handicap.....

Return to GOLF COMMITTEE
FEDERATION OF MUTUAL FIRE INS. COS.
180 N. Michigan Ave. CHICAGO, ILLINOIS

A Thousand Dancing Mirrors in Your Eyes—

That's a Dirty Windshield

Driving in the night behind a dirty windshield — it isn't so hard to see when you're alone on the road.

—then headlights come toward you.

—a thousand dancing mirrors flash the blinding light into your eyes. You can't see. You lose your sense of direction. Going into the ditch at night is hell's business . . . that's a dirty windshield.

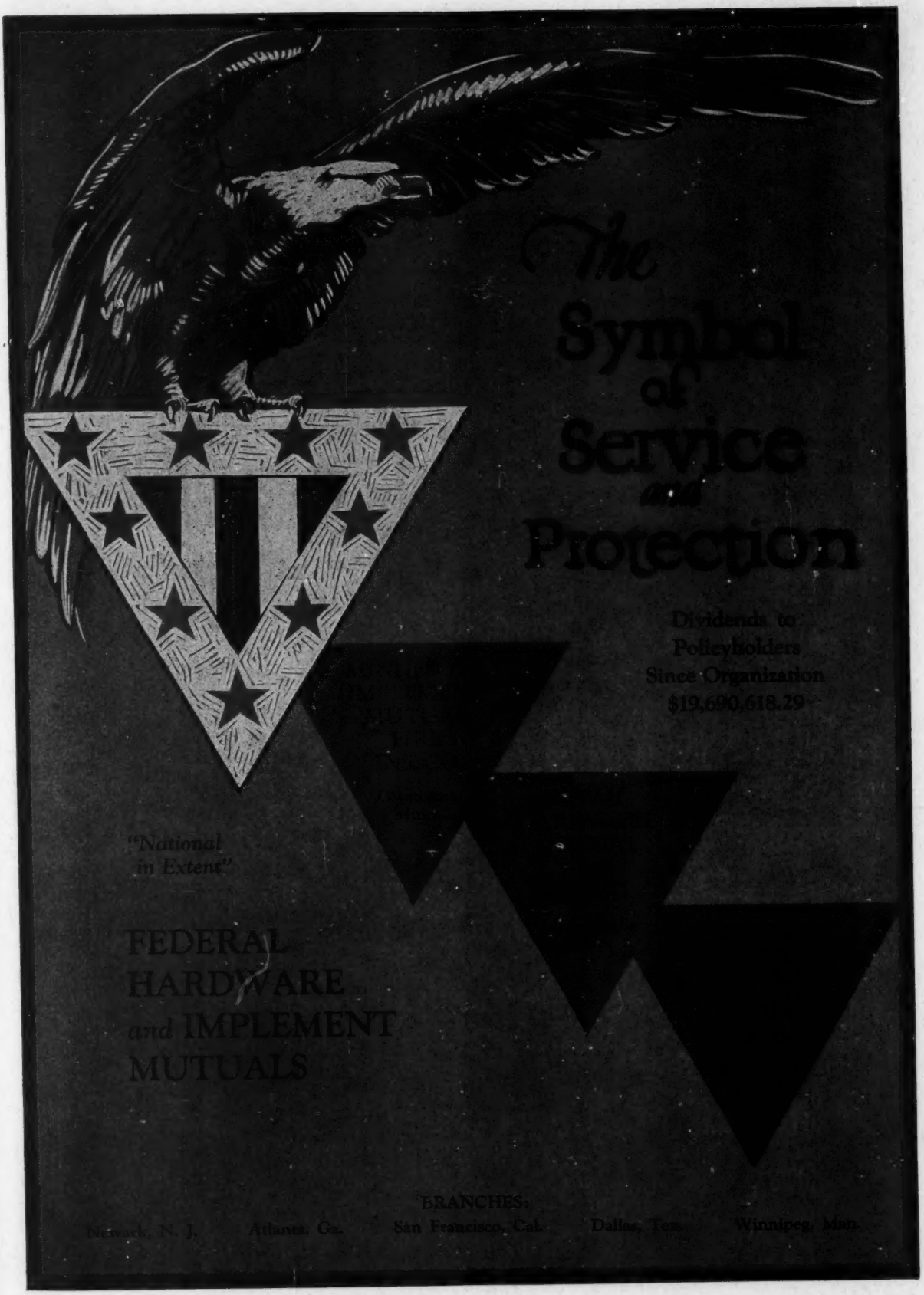
Every spot of dirt on your windshield becomes a tiny mirror when light is thrown against them. Thousands of them reflecting the dazzling blindness of the approaching headlights. You have no vision left.

Carry a chamois or a cloth in your car. Clean your windshield often — often enough to make your vision clear and sure. You can keep yourself out of lots of trouble when you can see your way clearly. Help reduce accidents. Think Safety.

* * *

HARDWARE MUTUAL CASUALTY COMPANY

STEVENS POINT, WISCONSIN


The Symbol of Service and Protection
Dividends to Policyholders Since Organization $19,690,618.29
"National in Extent"
FEDERAL HARDWARE and IMPLEMENT MUTUALS
BRANCHES:
Newark, N. J.
Atlanta, Ga.
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FIRE PREVENTION

merits your earnest attention not only during Fire Prevention Week, October 9-15, but throughout the year.

It is only through a good mutual company that you are able to realize the full benefit of fire prevention work. A mutual company returns to you or retains for your benefit in its reserves and surplus that portion of your insurance premium not required for the payment of losses and expenses. Consequently smaller losses mean a larger return to you and a lower net cost for your insurance.

Check up now on your insurance policies, then wire at our expense regarding additional coverage you may need.

Central Manufacturers Mutual Insurance Company

Lumbermens Mutual Casualty Company

National Retailers Mutual Insurance Company

Ohio Underwriters Mutual Fire Insurance Company

JAMES S. KEMPER

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ATLANTA	BUFFALO	NEWARK	PHILADELPHIA	ST. LOUIS
BALTIMORE	MILWAUKEE	NEW YORK	PITTSBURGH	SYRACUSE
BOSTON	MINNEAPOLIS	OMAHA	SAN FRANCISCO	TORONTO

Annual Cash Dividends to Policyholders Since Organization